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ABSTRACT

The report summarizes research conducted by the Institute for Research on Learning Disabilities (IRLD) on issues in assessment and identification of learning disabled (LD) students. The initial chapter highlights major findings from IRLD research studies on five topics: (1) the nature of the identification/classification process, (2) characteristics of LD students, (3) accuracy of current classifications, (4) factors involved in decisionmaking, and (5) components of the team decisionmaking process. Implications for practice are examined in terms of process-related and definitional-related issues. Among implications noted are the need for refocusing multidisciplinary team activities and for a simplified, more pragmatic approach to the definition of LD. Chapter 3 summarizes research on the issues of processes of identification and classification, including technical adequacy of assessment devices and methods. Chapter 4 reviews findings on student characteristics, with data on professionals' perceptions and criteria used to classify and identify LD students. Among data cited, in chapter 5, on the accuracy of current classification schemes are that current criteria using standardized test scores are inadequate and accuracy in team decisionmaking is questionable. Chapter 6, on factors involved in the decisionmaking process, touches on decisionmakers' perceptions, actual influences, and effects of classification decisions. In chapter 7, the team decisionmaking process is examined in terms of such variables as parent and teacher roles, time spent, effectiveness, and participants' perceptions. A final chapter, chapter 8, summarizes the data sources and research procedures used to obtain the findings cited in previous chapters. (CL)

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Research Report No. 142

# IDENTIFICATION/CLASSIFICATION RESEARCH: AN INTEGRATIVE SUMMARY OF FINDINGS

James E. Ysseldyke and Martha L. Thurlow

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During 1980-1983, Institute research focuses on four major areas:

- Referral
- Identification/Classification
- Intervention Planning and Progress Evaluation
- Outcome Evaluation

Additional information on the Institute's research objectives and activities may be obtained by writing to the Editor at the Institute (see Publications list for address).

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Research Report No. 142

# IDENTIFICATION/CLASSIFICATION RESEARCH: AN INTEGRATIVE SUMMARY OF FINDINGS

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Institute for Research on Learning Disabilities
University of Minnesota

September, 1983

Acknowledgment

This report is an integrative summary of IRLD research on identification, classification, and the related issues of eligibility and placement. The production of the report reflects a collaborative effort of many individuals. We cannot name them all. However, special acknowledgment must be given to Margaret Potter for her work in the initial phase of integration and Mark Shinn for his helpful review of the report as it was nearing completion.

## Chapter 1

### Overview of IRLD Identification/Classification Research

School personnel must first officially and formally identify a student as learning disabled before that student can be given special instructional services designed for LD students. School personnel have experienced considerably difficulty sorting out, from the many students who experience educational difficulties, indeed who fail to profit from their educational experiences, those who show specific learning disabilities and are eligible for LD services. Federal and state definitions of LD have changed over time, as have criteria for declaring students eligible for services. Yet, the one consistency that has been observed is the use of tests or batteries of tests for the purpose of making eligibility decisions.

The process of identifying students as learning disabled begins when a teacher or parent refers the student for psychoeducational evaluation. Testers test, and teams of professionals meet to review test data and make placement and instructional decisions. There are major difficulties in referral, testing, and team functioning.

Over a six-year period, the Institute for Research on Learning Disabilities (IRLD) at the University of Minnesota has conducted research on issues in the assessment and identification of learning disabled students. Many IRLD studies concentrated on the types of assessment devices being used and the differences between learning disabled students and other students.

This report describes the results of IRLD studies that provide information on identification and classification in today's schools. Findings from separate studies have been integrated to address major

issues and to produce recommendations for practice that are based on research results. The studies from which the findings and recommendations were derived used a variety of methodologies. Included among these were:

- Surveys and interviews
- Comparative studies
- Longitudinal case studies
- Psychometric assessment of students
- Simulation of decision-making process
- Theoretical analyses
- Development and evaluation of measures
- School record reviews
- Observations of team meetings
- Experimental contrasts

## Highlights of Major Findings

The major questions that we asked and the major findings are presented here in very brief form. Implications of the findings for practice are discussed in Chapter 2. Details of the evidence that supports the findings are presented in Chapters 3-7. Information of the data sources and specific research procedures are presented in Chapter 8.

### · How Are Students Identified/Classified?

1. What Are the Basic Steps in the Identification/Classification Process?

   a. The basic steps nationwide in the identification/classification process generally include referral, assessment, development of an IEP, and program implemention.

b. Considerable variability exists among school districts as to the specific activities that occur in this process.

c. Specific intervention strategies, prior to assessment or during IEP development and implementation, were most often omitted in the decision-making process.

2. What Are the Outcomes of the Identification/Classification Process?

a. School districts' close compliance with basic steps in the PL 94-142 process does not automatically result in greater benefits for the referred student.

b. Few meaningful changes occur for many students placed in special education services; of particular concern is the limited or no change in students' active academic responding.

3. What Kinds of Assessment Data, Devices, and Methods Are Used in the Identification/Classification Process?

a. There is neither a standard battery used by educators nor consensus among educators regarding which assessment sources yield the most useful information.

b. Professionals nationwide primarily use standardized ability and achievement tests to collect information for classification of students in special education.

c. Many other sources of assessment data frequently are employed, resulting in an abundance of diagnostic information about the referred student.

d. Although much child assessment data are available for child study teams, classification decisions often are unrelated to the diagnostic information.

4. How Technically Adequate Are the Assessment Devices and Methods Used in the Identification and Classification Process?

a. Nationwide, the majority of assessment devices and methods used by educators to make classification decisions are technically inadequate.

b. Educators seldom question the technical adequacy of a test before administering it; furthermore, the technical adequacy of tests used most with LD students has not been demonstrated.

c. In addition to test characteristics, factors in the testing situation (specifically, familiarity of the examiner) may bias assessment results for handicapped children.

· What Are the Characteristics of LD Students?

5. What Do Professionals Believe Are the Characteristics of LD Students?

-- Professionals are extremely variable in their beliefs about the characteristics and needs of LD students, the causes of the condition, the prevalence of the condition, and other information relevant to identification/classification decisions.

6. What Criteria Currently Are Used to Identify and Classify LD Students?

a. While a variety of criteria are used nationwide to identify and classify LD students, most criteria reflect ability-achievement discrepancies and/or achievement deficits.

b. The decision as to the eligibility of students for LD services often is based on information other than that specifically related to district criteria.

c. Although standardized tests are used most often when making classification decisions, some districts are monitoring student performance on direct academic measures for classification decision making.

· How Accurate Are Current Classifications of LD Students?

7. What is the Adequacy of Various Criteria for Identifying Students as LD?

a. Current criteria that use standardized test scores are inadequate for identifying LD students. Many normal students can be classified as LD based on their performance on standardized tests; LD and low-achieving students cannot be differentiated accurately on the basis of test scores.

b. A student's classification as LD contingent in many cases upon the criteria used by the school district; thus, a student's classification may change as a result of moving from one district to another.

c. Classification within a school district using a specific criterion often is inaccurate too. Many students who do not meet the district criterion are declared eligible for services, while others who do meet the criterion are declared ineligible.

8. To What Extent are Decision Makers Able to Use Assessment Data to Reliably Identify LD Students?

   a. In general, individual decision makers are not able to use assessment data reliably to identify LD students; many declare students eligible for special education service even though all assessment data are in the average range.

   b. Most students declared eligible are identified as LD. Yet, psychologists and special education teachers are able to differentiate between LD and low-achieving students with only 50% accuracy.

   c. Accuracy in team decision making is questionable; there is a minimal relationship between teams' classification decisions and test-based eligibility criteria. However, a moderate positive relationship does exist between the number of tests administered and the decision to classify a child.

9. To What Extent Do Direct Performance Measures Reliably Identify LD Students?

   a. Few school districts use LD criteria specifying performance deficits on direct measures; however, data suggest that the use of direct measures is a viable alternative to the use of standardized tests in making eligibility decisions.

   b. A series of validity studies indicate that LD resource room students and regular class students can be differentiated on one-minute to three-minute tests of reading, spelling, and written expression.

What Factors are Involved in the Decision-Making Process?

10. How Do Decision Makers Rate the Influence of Various Factors?

   a. The referral statement of a student's problem or objective assessment data are perceived by decision makers as very influential on their decisions.

b. Decision makers believe that naturally-occurring child characteristics have minimal effects on their decisions and that internal school system constraints have moderate effects.

11. To What Extent Do Various Factors Actually Influence Decision Making?

a. Both objective and subjective factors influence classification decisions for students.

b. The mere fact that a student was referred has a major influence on subsequent decision making; there is a very high probability that a referred student will receive some type of placement within special education.

c. Achievement measures are the most influential of all objective test data for identification and classification decisions. However, many subjective factors temper the influence of objective data.

12. What Are Some Effects of Classification Decisions?

a. The decision to classify a student as handicapped has its price tag. Although students may receive special assistance, being labeled as "special" influences teachers' expectations, especially those of classroom teachers.

b. Labels affect both teachers' and peers' attitudes toward the handicapped child; in some cases, negative effects may be reduced by stressing the child's competencies.

## What Happens In the Team Decision-Making Process?

13. Who Participates in Team Meetings?

-- While team membership is highly variable, parents, classroom and special education teachers, school psychologists, and administrators are considered vital to team functioning.

14. What Are the Roles of Regular Education Teachers and Parents in Team Meetings?

a. Although parents and classroom teachers participate only nominally in the decision-making process, team members report that information from them has a major influence on their final classification decisions.

b. Most students declared eligible for special education services spend at least half of their day in mainstream classrooms; yet regular education teachers often do not make recommendations for placement or instruction.

15. How Much Time is Spent in Team Decision Making?

a. The team decision-making process is lengthy and time consuming.

b. Variability in the amount of time devoted to team meetings is great; however, on the average, one team meeting about one student takes approximately 45 minutes.

c. Variability in the amount of time devoted to team decision-making related activities is great; however, on the average, testing and paperwork require about five hours per student.

16. What is Discussed at Team Meetings?

a. In general, the team decision-making process is extremely variable; it is difficult to characterize the functioning of a "typical" team.

b. Most team meeting time is spent in reporting test results in round-robin fashion; discussions of interventions attempted in the classroom are rare.

c. Very little time is spent in interpreting data, proposing alternative outcomes, or evaluating alternative outcomes.

d. In general, team efforts appear to be directed at verifying the existence of problems cited by teachers (labeling the child) rather than considering alternative instructional interventions.

17. How Do Team Meeting Participants View the Decision-Making Process?

a. In general, team members express satisfaction with the decision-making process.

b. Despite the time required for team meetings and the amount of data presented, team members generally do not change their perception of the student as a result of the meeting.

c. Very few team members question the adequacy of the team process for helping students, even though some members have specific concerns about scheduling, time, and other issues.

18. To What Extent Are Team Meetings Effective?

a. Team functioning is generally unsystematic; few team meetings meet basic criteria for effective team decision-making practices.

b. In most meetings, the issue of the least restrictive environment is not judged explicitly. The typical procedure involves presentation of test data followed by a placement recommendation.

19. To What Extent Do Students Benefit from the Team Decision-Making Process?

a. The results of the team meeting process are positive for some students and negative for others.

b. A time-consuming decision-making process does not necessarily result in benefits for students or teachers.

## Chapter 2

## Implications for Practice

Issues related to the identification and classification of LD students have been of particular concern during the past few years. The IRLD research findings summarized in this report confirm that the concern has been justified. The implications of the research findings are not limited to the area of learning disabilities, but rather relate to other mildly handicapping conditions as well. Two types of implications will be discussed in this chapter: first, those that relate to the process through which identification and classification decisions are made; second, those that relate to definitional issues.

### The Process

Once a referral is made, the identification and classification process begins. Too often, the process ends up being a search for pathology (a problem within the child), a search for confirming evidence that most often involves the use of technically inadequate devices. IRLD research findings suggest that to improve the identification and classification process, we need to (a) examine the assumptions that underlie our current assessment practices, (b) alter the team decision-making process in certain ways, and (c) require ongoing evaluation and documentation of team decision-making practices.

In examining assumptions that underlie current assessment practices, we must ask several questions. Is it good assessment practice to administer the same tests to all students who are referred? Is test-oriented assessment the best type of data to

obtain? Rather than asking, "What tests do I give?" perhaps we should be asking: (a) What decisions are we trying to make for the referred student? and (b) What behaviors of the student and/or the environment must be sampled to make those decisions? We need to broaden our view of assessment from primarily a psychometric orientation, an orientation that searches for presumed characteristics within the child, to an orientation that emphasizes the environment in which the student is expected to function. Standardized tests are merely one way to sample behaviors. Other techniques include daily measurement of educational objectives, charting of interventions tried, examination of classroom expectations, teacher-made tests, teacher observations, and structured observations of a student's active academic responding time.

The first step in the identification and classification process should be problem clarification. Problem clarification includes identification of the problem behavior, comparison to peers for a measure of deviancy, and examination of instructional/behavioral interventions attempted. If more than one problem behavior is identified, the teacher should rank order the severity of the behaviors. Next, it is important to ask, "How deviant is the problem behavior?" Data should be collected to compare the referred student with his/her peers. Finally, analysis of instructional and classroom interventions attempted is necessary. Consultation regarding a classroom intervention (either academic or behavioral) may conceivably, although not necessarily, halt the assessment process. Consequently, these steps will act as a screen to separate those students in need of more thorough assessment.

Another implication of IRLD research findings is that ongoing inservice training at various stages in the team decision-making process is needed. Inservice training appears warranted to prepare teams to make use of criteria for effective team functioning, to examine the purpose of multidisciplinary teams, and to increase the participation of the regular classroom teacher and parents in the decision-making process through explanation of assessment findings and instructional interventions.

The organization and structure of teams are important factors in efficient decision making. Time and scheduling problems, lack of funds, and the need for training are frequently-cited constraints on the team process. Training teams for effective decision making should focus on organized procedures, a clearly stated agenda, participation by all members, and use of data relevant to the decision. Attention to these factors should enable teams to be more time efficient and cost effective.

IRLD findings raise two questions about the purpose of multidisciplinary teams. First, a major purpose of these teams is to foster information sharing among participants; yet, the majority of team members reported that their perception of the student had not changed as a result of the meeting. If a purpose of the team meeting is to foster a multidisciplinary view of the student in which each team member adds a piece that contributes to the total picture, we would expect members' views to be altered in meetings. Since team members' views were not significantly altered, it does not appear that this goal of multidisciplinary teams was met. Second, the research

findings suggested that an examination of team members' beliefs regarding assessment and the team role is necessary. Teams should ask, "Are we functioning as a team to diagnose and place or as a team to improve teaching, instruction, and learning?" Teams need to increase time spent in generating alternative service options and instructional interventions for the student. It is time to refocus team thinking away from who will serve the student to how can we, as educators, teach the student. Hopefully, such a refocusing will lessen the number of cases in which a student goes through the lengthy team decision-making process only to be declared ineligible and thus returned to the referring teacher who still does not know what to do for the student.

Non-specialized participation is one of the criteria for effective decision making. However, IRLD results indicated that while information provided by regular classroom teachers and parents was considered most valuable by all team members, parents and classroom teachers were among the least active participants in decision making. Training in group process skills should be provided; it is needed to increase meaningful participation by teachers and parents. Since regular education teachers often are involved in the day-to-day implementation of team decisions, their lack of active participation in decision making is disturbing. They should be provided with consultation and training in the principles of individualizing instruction, alternative intervention strategies, and class management techniques. Without this essential knowledge base, it is erroneous to expect classroom teachers to be active participants in the team

decision-making process, particularly in setting goals and identifying methods of instruction for students. Parents also need to be educated regarding assessment findings and educational alternatives. It may be that parents do not actively participate in meetings because they are receiving technical information for the first time.

Teams often discuss a student over a series of weeks before holding an eligibility conference. Recognizing that time is a precious resource, we suggest that teams can make the team process more efficient, increase the participation by parents and classroom teachers, and influence instructional planning by reallocating team time to include two preparation conferences. At the school preconference all school members would meet once to share and integrate assessment findings. At the parent preconference, one educator (e.g., school psychologist) could serve as the team representative to convey the integrated assessment picture to the parents, to outline the purpose and agenda of the full team meeting, and to encourage questions. Additional reading materials on assessment and intervention techniques, preferably handouts written by team members, could be provided to the parents at this time. The preconferences should ensure understanding of the assessment information and crucial issues to be addressed, thereby enabling all participants to communicate and be actively involved in the decision.

Ongoing evaluation and documentation of the team process is necessary. Although the implications of IRLD research advocate for change in the identification/classification decision-making process, we are not suggesting elimination of all current practices. Although

we feel change must occur to broaden assessment techniques, we are not advocating abolition of comprehensive psychoeducational diagnostic studies. Although we feel inservice training or continuing education to broaden the knowledge base of all educators is necessary to improve instruction for all students, we are not advocating the demise of special education.

The finding that if a student is referred there is a high probability the student will be placed allows us to advocate for yet another change. We do not believe that all students referred (or even a high percentage) require placements. It is our feeling that referrals require interventions at many levels, from instructional changes within the regular classroom to intensive self-contained special education programming. We advocate for a change from referral-to-placement to referral-to-intervention.

Definitional Issues

The lack of agreement on how to define learning disabilities has had a significant impact on both the research literature and school classification procedures. Researchers and educational personnel have selected dissimilar samples based upon diverse definitional criteria using different psychoeducational devices. Students identified as LD in one setting are very likely to be different from those identified as LD in another setting. As it is presently conceptualized, the category of "learning disabilities" is an ill-defined disorder with little consistency among definitions to allow for reliable prediction of LD classification. A student may or may not be classified depending on which definition is selected, how it is operationalized,

the idiosyncratic approach to assessment by the diagnostician, the degree of curriculum bias, and the extent to which information on exclusionary criteria is used.

Considering the extreme variability in the percentage of students classified as LD depending on which definition is used, clear implications are apparent for school administrators who are concerned with economic as well as educational considerations. If funds are limited, the schools may want to use a stringent definition that identifies a small percentage of students. If funds are more readily available, the school district may vote to adopt a more lenient definition that identifies a greater percentage of students. A school district could change its definition of learning disabilities whenever the need arose (e.g., whenever funds are tightened). In fact, school districts and governmental agencies do so now.

The overwhelming complexity of operationalizing definitions of learning disabilities, in addition to the added problems involving reliability and validity issues (e.g., curriculum bias), should not be dismissed lightly. There is considerable doubt that school personnel can accurately and reliably identify such students. We can arbitrarily include or exclude students simply by adopting one definition over another or by varying the way we operationalize the definition.

One thing is certain given the current state of definitional confusion. Another definition of learning disabilities or an overly sophisticated method of operationalizing a definition is not needed. Educational personnel should not continue to tolerate inconsistent and

methodologically unsound definitions or attempt to create more and more inadequate definitions. What is needed is the development of a conceptual framework that permits the assessment of students on educationally relevant variables. Most current methods of evaluating pupils for purposes of classification provide us with little information to guide our intervention efforts. Educators need to avoid crude and global classifications and to concentrate instead on assessment of students that are meaningful for instructional purposes. Knowledge of IQ or neurological status, although important at times, does not always provide relevant information for establishing appropriate instructional goals.

In summary, a simplified, more pragmatic approach is necessary. From the beginning of the referral process, data should be collected that will be useful for program planning. Considerably less time should be spent on attempts to identify students for eligibility in various special education categories. A noncategorical orientation would allow students to be grouped for instruction according to their specific academic weaknesses rather than strictly on the basis of their categorical labels.

As changes occur in providing special education services to students, allocation of funds is likely to be problematic. In many states, special education funds are allocated on a categorical basis and are available only when specific students have been labeled and placed into specialized programs other than the regular classroom. Thus, if schools are to revise current procedures, major changes are necessary in both legislation and regulations.

# Chapter 3

## How Are LD Students Identified/Classified?

This chapter summarizes IRLD research findings related to the issue of the process through which students are identified/classified as LD. Four specific questions are addressed in this chapter:

- What are the basic steps in the identification/classification process?
- What are the outcomes of the identification/classification process?
- What kinds of assessment data, devices, and methods are used in the identification/classification process?
- How technically adequate are the assessment devices and methods that are used in the identification and classification process?

For each question, the major findings are summarized and the data sources from which the findings are obtained are listed (generally ordered in terms of recency). Specific evidence for the major findings then is presented.

### 1. What Are the Basic Steps in the Identification/Classification Process?

Findings:

a. The basic steps nationwide in the identification/classification process generally include referral, assessment, development of an IEP, and program implementation.

b. Considerable variability exists among school districts as to the specific activities that occur in this process.

c. Specific intervention strategies, prior to assessment or during IEP development and implementation, were most often omitted in the decision-making process.

Data Sources:

- Survey of special education directors (RR 14)
- Survey of model LD programs (RR 11)

Evidence:

The average number of steps taken by school districts in the assessment and decision-making process was reported to be about nine (RR 11, 14); however, the basic steps fall into four areas. Most directors (RR 14) and model LD programs (RR 11) described the process as starting with referral or child find. Few attempts were made to modify the classroom setting or instruction as part of the process. More than half of the directors and model LD programs indicated that the classroom teacher, either alone or with others, was the initiator of the referral.

Intervention efforts preceding the assessment of the student occured infrequently; rarely was there a formal procedure for intervention prior to assessment. Psychological assessments and observation procedures were the primary focus of assessments. The psychologist and regular classroom teacher most often were the professionals responsible for the assessment.

Development of the IEP typically occured after a decision was made as to the eligibility of the child for special services. Most often, the eligibility decision was made by a team of individuals, but sometimes a single individual made the decision. In some cases, eligibility decisions were made at the same meeting in which placement decisions were made and the IEP written.

Although the IEP typically was formalized at a meeting with the parent present, considerable development of the plan preceded the parent meeting. Rarely were strategies to implement the IEP included as a step in the decision-making process. Implementation of the

program actually seemed to reflect simply the placement of a student in special education rather than the start of an instructional program designed for the student.

2. What Are the Outcomes of the Identification/Classification Process?

Findings:

a. School districts' close compliance with basic steps in the PL 94-142 process does not automatically result in greater benefits for the referred student.

b. Few meaningful changes occur for many students placed in special education services; of particular concern is the limited or no change in students' active academic responding.

Data Sources:

- Instructional time observations (RR 95)
- Longitudinal study of decision making (RR 44)

Evidence:

In the longitudinal study of decision making (RR 44), one team adhered to model decision-making steps, yet the net result for the student was a loss of services. Two schools in one district differed greatly in their adherence to model steps. One school exhaustively reviewed the referral problem, and conducted extensive assessments and meetings to determine eligibility. The other school streamlined all but the initial step (referral review) into one meeting that took less than one hour. The outcome for a student in the first school was essentially a somewhat larger dose of a previously developed program, while the outcome for a student in the second school was a program designed specifically to remediate skill deficiencies. Further, the amount of time devoted to testing alone ranged from 4½ to 13½ hours.

The student who was tested most extensively (at an estimated cost of $3,000) did not appear to reap the benefits that might be expected given the time and expense involved.

Detailed observations of students in their classrooms indicated that while some increases occurred in the amount of individual instruction received by a student after special education placement, transitory changes or no changes occurred for most students in the amount of time the student engaged in specific academic responses such as reading aloud or silently, writing, and asking or answering academic questions (RR 95). Variability in the effects of special education placement on instructional times and active student responding was great.

3. What Kinds of Assessment Data, Devices, and Methods Are Used in the Identification/Classification Process?

Findings:

a. There is neither a standard battery used by educators nor consensus among educators regarding which assessment sources yield the most useful information.

b. Professionals nationwide primarily use standardized ability and achievement tests to collect information for classification of students in special education.

c. Many other sources of assessment data frequently are employed, resulting in an abundance of diagnostic information about the referred student.

d. Although much child assessment data are available for child study teams, classification decisions often are unrelated to the diagnostic information.

Data Sources:

- Survey of LD teachers (RR 66)
- School record reviews (RR 45)
- Longitudinal study of decision making (RR 44)
- Team meeting observations (RR 40)

- Survey of educational personnel (RR 28)
- Decision-making simulation study (RR 17, 32)
- Survey of special education directors (RR 14)
- Survey of model LD programs (RR 11)

Evidence:

In surveys of special education directors (RR 14) and model LD programs (RR 11), in observations of team meetings (RR 40, 44), and in record reviews (RR 45), the numbers of standardized tests administered to students were great. Individual model LD programs listed as few as 3 and as many as 39 different tests that they used for identification and classification decision making. On the average, the results from more than two different tests were discussed at team meetings, with some meetings presenting the results from as many as 12 different tests. LD teachers had expressed the belief that formal tests provide information that is most useful in determining the level and amount of service needed by LD students (RR 66).

The selection of specific tests to make identification and classification decisions is highly variable. The observed variability does not relate directly to the professional role of the individual selecting the tests or to the person's knowledge about assessment (RR 32). In many cases, the devices selected (at least the ones selected most often) do not even differ as a function of the nature of the student's problem (RR 28, 32, 44), although there is some tendency for the tests selected to vary as a function of the referral reasons (RR 17, 32). The longitudinal study of identification and classification decision making (RR 44) revealed enormous variability in the number

and type of assessment devices used to evaluate students. There was not a clear correspondence between the presenting problem and the devices selected. Rather, the criteria for eligibility appeared more influential. Thus, in those districts where a definition of a severe discrepancy between ability and achievement prevailed, devices that assessed IQ and achievement were administered. In those schools where eligibility was determined by mastery of the school curriculum, informal inventories that assessed skill mastery were employed, usually in addition to standardized tests. In those instances where the definitional criteria were less precise, more tests were used. The availability of specialized personnel also seemed to affect the quantity and type of assessment data collected.

The extensiveness of the data collected when making identification and classification decisions does not insure that the data will be useful in the future. In a search of school records, it was found that there were innumerable problems of missing data, tests administered at various points in time, non-standard test administrations, and other related difficulties (RR 45).

4. How Technically Adequate Are the Assessment Devices and Methods That are Used in the Identification and Classification Process?

Findings:

a. Nationwide, the majority of assessment devices and methods used by educators to make classification decisions are technically inadequate.

b. Educators seldom question the technical adequacy of a test before administering it; furthermore, the technical adequacy of most tests used with LD students has not been demonstrated.

c. In addition to test characteristics, factors in the testing situation (specifically, familiarity of the examiner) may

bias assessment results for handicapped children.

Data Sources:

- School record reviews (RR 45)
- Comparison of two ability tests (RR 36, 38)
- Survey of educational personnel (RR 28)
- Decision-making simulation study (RR 9, 32)
- Psychometric assessment of low achievers (RR 15)
- Survey of model LD programs (RR 11)
- Study of examiner familiarity effects (RR 42, 54, 70, 110, 134, 135)

Evidence:

When the devices used most often by model LD programs (RR 11) and participants in simulated decision making (RR 9, 32) were analyzed according to specific criteria for technical adequacy, those used most often tended to be technically adequate. However, as simulation decision makers selected additional devices, there was a marked decline in the number that were technically adequate. This finding was confirmed by surveys of school psychologists and other diagnosticians (RR 28) who reported on the devices used for identification and classification decisions.

The frequency with which decision makers consult technical manuals to obtain information on technical adequacy also is low (RR 32). In general, school psychologists and school administrators, those individuals most likely to be more familiar with tests, made fewer requests for technical information than did teachers and other school personnel. Individuals with very high levels of assessment knowledge also tended to make few requests for technical information.

Comparisons of two popular tests for use with LD students (RR 36, 38) indicated significant differences in scores obtained from the two

even though they reportedly measured the same thing. These differences would have implications for identification and classification decisions: whether a student qualified for LD services would be a function of the assessment device used rather than the student's performance. Additional examination of a specific measure indicated low external validity for LD students even though the validity of the test for other students had been documented (RR 15). Such findings highlight the importance of evaluating assessment devices as to their appropriateness for the specific use to which they will be put.

In addition to considering the technical adequacy of devices used in assessment, research indicates that it is necessary to consider factors in the testing environment. Several studies have examined the effects of examiner familiarity on the test performance of handicapped children. It has been demonstrated that preschool handicapped students perform significantly better with familiar examiners than with unfamiliar examiners on tasks requiring a high level of symbolic mediation (RR 42, 135), although the differences are reduced when the personally unfamiliar examiner is professionally familiar with the type of child being tested (RR 54). However, regardless of the examiners' professional familiarity, students performed better if time was taken to establish personal familiarity with the child to be tested (RR 110). When differences in performance do occur, they seem to be related to differences in the examiners' behaviors (RR 70). For example, familiar examiners more often (a) provided longer and more frequent intervals of silence, (b) used directive language, (c) used

eye contact to decide when to speak, and (d) spoke for shorter durations. Differential performance also was found for school-age handicapped children, although not for non-handicapped school-age children (RR 134).

# Chapter 4

## What Are the Characteristics of LD Students?

This chapter summarizes IRLD research findings related to the isue of the characteristics of those students who are identified/classified as LD. Two specific questions are addressed in this chapter:

- What do professionals believe are the characteristics of LD students?
- What criteria currently are used to identify and classify LD students?

For each question, the major findings are summarized and the data sources from which the findings were obtained are listed (generally ordered in terms of recency). Specific evidence for the major findings then is presented.

### 5. What Do Professionals Believe Are the Characteristics of LD Students?

Findings:

-- Professionals are extremely variable in their beliefs about the characteristics and needs of LD students, the causes of the condition, the prevalence of the condition, and other information relevant to identification/classification decisions.

Data Sources:

- Survey of LD experts (RR 77)
- Survey of LD teachers (RR 66)
- Survey of regular education teachers (RR 29, 39)
- Instructional planning survey (RR 27)

Evidence:

Perhaps the area of least variability related to LD students is teachers' views of the major causes of learning disabilities. When

surveyed, most teachers attributed learning disabilities to environmental causes (RR 29, 39) or medical/hereditary causes (RR 66). Equal numbers of teachers agreed and disagreed that LD students can learn as well as their normal peers when given support services (RR 29, 39, 66).

Teachers who listed major characteristics of LD students gave attributes that could be classified into at least 12 different categories, with few differences in frequencies of teachers listing each category (RR 66). Similarly, major reasons for LD listed by teachers could be organized into at least eight different categories, with the medical/hereditary reasons cited much more frequently than others. Types of information useful for determining level and amount of service needed by LD students could be classified into 11 categories, with little difference in the frequency with which each was listed.

Teachers presented with a list of 15 student characteristics viewed all as problems when working with LD students (RR 66). The greatest problems were distractibility, weak auditory memory, poor discrimination skills, and inadequate self concept. No differences were found between experienced and less experienced teachers in their views of these problems. Other professionals were asked to select from four areas (academic skills, classroom behavior, self image, other) those in which LD students have the greatest needs (RR 27). LD teachers viewed improvement in self image and academic skills as nearly equal in importance; school psychologists more often viewed improvement in academic skills as the area of greatest need for LD students.

Leaders in the LD field, in general, endorsed LD as a viable classification and indicated that it is clinically identifiable by specific symptoms or a syndrome of symptoms (RR 77). Yet, their estimates of prevalence ranged from 0% to 70%, and their estimates of the age at which LD can be identified ranged from 0 to 9 years. However, while 80% of the leaders who responded in 1975 believed LD could be identified before 5 years of age, only 45% of the leaders who responded in 1981 believed this was possible. Leaders in the field appear to have become more cautious, perhaps as the optimism about precise identification and effective programming fails to be supported.

6. What Criteria Currently Are Used to Identify and Classify LD Students?

Findings:

a. While a variety of criteria are used nationwide to identify and classify LD students, most criteria reflect ability-achievement discrepancies and/or achievement deficits.

b. The decision as to the eligibility of students for LD services often is based on information other than that specifically related to district criteria.

c. Although standardized tests are used most often when making classification decisions, some districts are monitoring student performance on direct academic measures for classification decision making.

Data Sources:

- Survey of LD teachers (RR 108)
- Analysis of predictive efficiency of direct measures (RR 104)
- Analysis of LD criteria (RR 98, 99)
- Comparison of direct measure eligibility criteria (RR 89)
- Analysis of educators' classification decisions (RR 52)
- Analysis of researchers' classification decisions (RR 51)
- Psychometric assessment of low achievers (RR 13, 69)
- Survey of model LD programs (RR 11)

Evidence:

Model LD programs used at least seven different criteria for identifying LD students during 1978-79 (RR 11). Most reported using the definition in the 1977 Federal Regulations. Others used the definition proposed by the National Advisory Council on Handicapped Children in 1968, the proposed Federal Regulations of 1976, a program-developed definition, or state guidelines. A review of the literature revealed at least 47 different criteria that were suggested for use in identifying LD students (RR 98, 99), with 17 being among those cited most frequently. Similarly LD teachers listed a variety of definitions used by their school districts to identify LD students (RR 108). Ability-achievement discrepancies and achievement deficits were the most common criteria used nationwide, followed by test scatter patterns, and process disorders. However, the specific criteria within these basic categories were numerous. Further, the number of criteria that did not fit within any of the basic categories exceeded the number within any one category.

Psychometric assessments of students (RR 13) indicated, however, that the actual criteria being used in school districts are not simply those specified in written criteria. Comparisons of classifications of students by ability-achievement discrepancies and achievement deficits with school classifications of those students revealed only minimal agreement (RR 13, 98, 99), although low achievement was the most recognizable common characteristic of the school-identified LD group (RR 69).

A novel approach to the identification of LD students is reflected in criteria specifying deficits in performance on direct

measures of reading, math, written language, and spelling (RR 89, 104). This type of criterion is used in a small number of school districts nationwide.

# Chapter 5

## How Accurate Are Current Classifications of LD Students?

This chapter summarizes IRLD research findings related to the issue of the accuracy of current LD classifications. Three specific questions are addressed in this chapter:

- What is the adequacy of various criteria for identifying students as LD?
- To what extent are decision makers able to use assessment data to reliably identify LD students?
- To what extent do direct performance measures reliably identify LD students?

For each question, the major findings are summarized and the data sources from which the findings were obtained are listed (generally ordered in terms of recency). Specific evidence for the major findings then is presented.

### 7. What is the Adequacy of Various Criteria for Identifying Students as LD?

Findings:

a. Current criteria that use standardized test scores are inadequate for identifying LD students. Many normal students can be classified as LD based on their performance on standardized tests; LD and low-achieving students cannot be differentiated accurately on the basis of test scores.

b. A student's classification as LD in many cases is contingent upon the criteria used by the school district; thus a student's classification may change as a result of moving from one district to another.

c. Classification within a school district using a specific criterion often is inaccurate too. Many students who do not meet the district criterion are declared eligible for services, while others who do meet the criterion are declared ineligible.

Data Sources:

- Analysis of performance instability (RR 127)
- Analysis of LD criteria (RR 92, 98, 99)
- Comparative study of referral procedures (RR 75)
- Analysis of psychometric assessment data (RR 47, 69)
- Analysis of subtest scatter (RR 46)
- School record reviews (RR 45)
- Longitudinal study of decision making (RR 44)
- Analysis of difference score reliabilities (RR 37)
- Psychometric assessment of low achievers (RR 13, 69)
- Theoretical analyses of LD criterion (RR 7)

Evidence:

Psychometric comparisons of LD and low-achieving students on almost 50 specific measures revealed few differences between students in the two groups that would be of practical utility for decision making (RR 13, 69). Although the mean level performance of LD students was lower on most measures, particularly achievement measures, the magnitude of the mean differences was moderate. The percentage of overlapping scores for LD and non-LD students was from 82% to 100%; the median overlap was 96%. Further, more than half of the test scores of students in the two groups were the same.

The extent to which these students and others met specific operationalizations of federal criteria also were examined. Both ability-achievement discrepancies and achievement deficits were studied. In these analyses, significant numbers of students classified as LD did not meet the federal criteria, while significant numbers of students not classified as LD did meet them (RR 13, 47, 69, 92, 98, 99). For example, when a 1.5 standard deviation

achievement deficit criterion was applied, 40% of the students examined were misclassified. When a 1.5 ability-achievement discrepancy criterion was applied, 50% were misclassified. In addition, no relationship was found between classification on the basis of a test-identified severe discrepancy and classification on the basis of a 1.0 ($r = .03$) or 1.5 ($r = .17$) standard deviation discrepancy (RR 47). This occurred despite the indication that the relaibility of the difference score was relatively high (RR 37).

Within a private school for LD students, students showed low performance levels both on measures of achievement and measures of ability (RR 45). Analyses of individual ability-achievement discreparcies revealed that more than two-thirds of the students had discrepancies of less than 1.0 standard deviation. Only 5% of the students had ability-achievement discrepancies of at least 1.5 standard deviations.

Analyses of other commonly-used criteria produced similar results. A study of performance instability on direct mesures (RR 127) and an examination of scatter analysis procedures (RR 46) indicated that the practice of looking for variability in performance should be discouraged as a criterion when attempting to identify LD students. This recommendation was made because it was found that there were no differences between the performance instability of LD students and emotionally handicapped students on direct measures of reading, and that normal students demonstrated the large differences in standardized subtest scores typically attributed to LD students. Evaluations of two procedures for determining severe discrepancy

levels also highlighted the variability that occurs in students identified as a function of the criterion used (RR 7). IQ appears to be highly influential in its effects on obtained discrepancy levels and the related percentage discrepancies.

The application of 17 different LD criteria to students' test scores revealed that more than 85% of normal students could be classified as LD by at least one definition (RR 92). Over 85% of low-achieving students (who were not classified by their schools as LD) could be classified as LD. Yet, 4% of school-identified LD students did not meet any of the criteria for classification as LD. With other samples of students, factor analysis indicated that low achievement accounted for over four times the variance in students' test performances as did ability-achievement discrepancies (RR 98). Scatter did not contribute independently to classification. The percentages of students identified as LD by 14 different criteria ranged from 5.3% to 69.6%, with a median of 29.5% (RR 99).

The longitudinal study of decision making indicated that as many different eligibility criteria were used as there were school districts involved (RR 44). The lack of consistent criteria among school districts, all of which were located in the same metropolitan area, suggests that the characteristics of students declared eligible for LD services may be situation specific. Examples of this were provided by the cases of two students, both of whom had received services in other districts prior to moving to the districts in which observations were conducted. Their referrals in the new districts were prompted by parental contacts. The criteria for identification

and classification procedures in effect in their new districts resulted in a shift in categorical label for one student, and a reduction in direct individual instruction for both students. These changes cannot be attributed to changes in the students. While the procedures used to identify the student as LD in the original district are unknown, observational data suggested that the new school's ability to accommodate the student in the regular classroom and the availability of services were the primary determinants of eligibility and level of services in the new school. Were these students to be referred in another school district, it is highly probable that a different outcome would occur. This type of inconsistency is not a characteristic of adequate criteria for identifying and classifying LD students.

In one set of school districts that used a very specific severe discrepancy criterion, students who were referred by their teachers and students who were referred by weekly measures of reading, spelling, and written language performance did not differ in terms of overall scores on standardized measures of cognitive ability, achievement, and school behavior (RR 75). Yet, 44% of the students who had been referred by teachers were placed in special education services, while only 14% of the students who had been referred as a result of their performance on weekly measures were placed in special education services. Further, only 36% of the teacher-referred students who were placed in special education met the stated severe discrepancy criterion. The identification and classification criteria cannot be considered adequate if a significant percentage of the students who are identified and classified do not meet the criteria.

8. To What Extent are Decision Makers Able to Use Assessment Data to Reliably Identify LD Students?

Findings:

a. In general, individual decision makers are not able to use assessment data reliably to identify LD students; many declare students eligible for special education service even though all assessment data are in the average range.

b. Most students declared eligible are identified as LD. Yet, psychologists and special education teachers are able to differentiate between LD and low-achieving students with only 50% accuracy.

c. Accuracy in team decision making is questionable; there is a minimal relationship between teams' classification decisions and test-based eligibility criteria. However, a moderate positive relationship does exist between the number of tests administered and the decision to classify a child.

Data Sources:

- Analysis of educators' classification decisions (RR 52)
- Analysis of researchers' classification decisions (RR 51)
- Team meeting observations (RR 40)
- Decision-making simulation study (RR 18, 32, 33)

Evidence:

Over 51% of more than 200 school professionals declared students with average psychometric assessment information to be eligible for special education services (RR 32). The student was said to be LD by 90% of these professionals and 80% indicated that regular class placement with consultation or part-time resource room placement was most appropriate for the student. Little relationship was found between the professionals' knowledge of assessment and the eligibility decision. However, regular educators were most likely to declare the

student eligible for special education services. Over 70% of the school professionals indicated that the student was likely to experience reading problems in the future.

Additional analyses of individual decision makers in the computer simulation study highlighted the variability among decision makers and even within individual decision makers (RR 33). One individual declared the child ineligible for services but indicated regular class placement with consultation from a resource teacher would be appropriate for the student. Another declared the student ineligible for services but indicated that the student was probably LD and should be placed part time in a resource room. One individual declared the student eligible but was unable to classify the student.

Various judges (researchers, psychologists, special education teachers, and naive college students), who reviewed forms containing information on 42 test or subtest scores of 50 school-identified LD students and 49 non-LD students, encountered similar difficulties in using assessment data to identify LD students. Researchers, who in most cases had previously taught LD students or had served as school psychologists, were extremely inaccurate in discriminating between LD and non-LD students (RR 51). This was true whether their classifications were compared to the schools' classifications of the students, classifications based on two operationalizations of the federal definition, or two low achievement definitions. Further, there was little agreement among these judges as to which students were LD and which were not. Analyses also indicated that individual judges emphasized different factors in reaching their decisions.

Almost all of the 99 students whose test data were reviewed were labeled LD by at least one judge, and only five were consistently labeled by all judges as non-LD (despite the fact that three of these were identified as LD by the schools).

When practicing school psychologists and special education teachers, as well as a group of college students who had no more than an introductory level psychology course, examined the array of test information on 18 of the students, they experienced similar difficulties in differentiating LD and non-LD students (RR 52). All three groups of judges were in agreement with the schools' classifications about half of the time. Only when compared to a classification of the students on the basis of a 1.5 standard deviation achievement deficit did the three groups of judges differ in their accuracy of classification. However, in this comparison the naive group was more accurate (73.1% accuracy) than either the school psychologists (56.5% accuracy) or teachers (54.7% accuracy). For the one student who was classified as LD by the school, by the two federal definition operationalizations, and by the two low achievement definitions, considerable percentages of school psychologists (35.4%), teachers (36.8%), and even naive judges (19.0%) classified the student as non-LD. The low accuracy levels and inter-judge agreement levels indicate that decision makers are not able to use assessment data reliably to identify LD students.

Observations of team meetings also confirmed that the extent to which decision makers use assessment data reliably to identify LD students is questionable (RR 40). Minimal relationships were found

between classification decision and the presentation of statements relevant to ability-achievement discrepancies ($r$ = .29), verbal-performance discrepancies ($r$ = .28), or federal definition criteria ($r$ = -.13). However, a moderate relationship was found between the amount of data presented in the meeting and the classification decision ($r$ = .52); the more test information presented, the more likely the decision was to classify the student as LD.

9. To What Extent Do Direct Performance Measures Reliably Identify LD Students?

Findings:

a. Few school districts use LD criteria specifying performance deficits on direct measures; however, data suggest that the use of direct measures is a viable alternative to the use of standardized tests in making eligibility decisions.

b. A series of validity studies indicate that LD resource room students and regular class students can be differentiated on one-minute to three-minute tests of reading, spelling, and written expression.

Data Sources:

- Analysis of predictive efficiency of direct measures (RR 104)
- Comparison of direct measure eligibility criteria (RR 89)
- Developmental study of direct measures (RR 87)
- Comparative study of referral procedures (RR 75)
- Direct measure assessment of LD children (RR 71)
- Longitudinal study of direct measures (RR 49)
- Technical characteristics of direct written expression measures (RR 22)
- Technical characteristics of direct spelling measures (RR 21)
- Technical characteristics of reading measures (RR 20)

Evidence:

During the development of a set of direct measures, significant differences in the performances of LD and non-LD students were found. On the reading measures, non-LD students scored four to five times higher than LD students on a word list, more than three times higher on a reading passage, and nine times higher on a Cloze (completion) test (RR 20). Similar differences were found at all elementary grade levels, and were corroborated by the finding of differences across grade levels and within grade levels over a school year (RR 49, 87). In spelling, the scores of non-LD students were four times higher than those of LD students at all grade levels whether performance was scored in terms of correct words or correct letter sequences (RR 21). In written expression, mean differences existed between LD and non-LD groups by factors ranging from 1.5 to 2.0 times; all differences were statistically significant (RR 22). The differences were found at all grade levels, with the scores of grade 6 LD students being approximately equivalent to those of grade 3 non-LD students. Additional analyses in the areas of reading and written expression indicated that performance on these measures predicted student eligibility for LD services as efficiently as commercial measures of achievement and ability-achievement discrepancy (RR 104).

For the same group of LD and non-LD students for whom no psychometric differences on standardized tests were found, practical and significant differences were found in their performances on direct performance measures over a five-week period (RR 71). A high relationship (.77) was found between the students' performance on the

measures and their classification as LD or non-LD. The school classification of the students was predicted with 89% accuracy on the basis of their performances on direct measures.

When direct measures were used in an experimental study to compare students referred by teachers with students referred as a result of their performance on direct measures over a 10-week period, 80% of the students referred by direct measures and classified as LD by the decision-making team met a very severe discrepancy criterion, while only 36% of the teacher-referred students who were classified as LD met the criterion (RR 75). Results from one school district that uses a criterion of a discrepancy between a target student and the student's peers on the direct measures as the sole indicator of eligibility suggest that the use of direct measures is a viable alternative to the use of standardized tests and does not substantially change the number of students served (RR 89).

# Chapter 6

## What Factors Are Involved in the Decision-Making Process?

This chapter summarizes IRLD research findings related to the issue of the factors involved in the identification/classification decision-making process. Three specific questions are addressed in this chapter:

- How do decision makers rate the influence of various factors?
- To what extent do various factors actually influence decision makers?
- What are some effects of classification decisions?

For each question, the major findings are summarized and the data sources from which the findings were obtained are listed (generally ordered in terms of recency). Specific evidence for the major findings then is presented.

### 10. How Do Decision Makers Rate the Influence of Various Factors?

Findings:

a. The referral statement of a student's problem or objective assessment data are perceived by decision makers as very influential on their decisions.

b. Decision makers believe that naturally-occurring child characteristics have minimal effects on their decisions and that internal school system constraints have moderate effects.

Data Sources:

- Analysis of educators' classification decisions (RR 52)
- Team meeting observations (RR 40)
- Decision-making simulation study (RR 17, 32)
- Survey of educational personnel (RR 25)
- Survey of special education directors (RR 14)

Evidence:

Across groups, information on intelligence and achievement scores was believed to have the greatest influence on decisions (RR 14, 17, 25, 32, 40, 52). Professionals participating in the decision-making simulation study rated personality tests, behavioral recordings, and adaptive behavior scales as more influential when the reason for the student's referral was behavioral in nature (RR 32). Language test scores were seen as having the smallest effect of all the assessment data.

Information on the student's sex, socioeconomic status, and physical appearance was perceived to have an insignificant infuence on decisions by all groups (RR 14, 17, 25, 32, 40, 52). The referral statement of the student's problem, on the other hand, was seen consistently as having a significant influence on decisions made (RR 32). Other factors rated as influencing decisions were teacher reports of classroom achievement and information from parents (RR 14, 40)

Factors reflecting institutional constraints (availability of services) or external pressures (advocacy groups) were seen as less influential than data factors (RR 14, 25, 40, 58). Availability of services, specifically, was given a rating that indicated its effect was somewhere between moderate and significant. Both teacher-child match and the child's school attendance record were given much lower ratings.

Analyses of the ratings given by various professionals participating in simulated decision making revealed very little

variation across roles (RR 32). School psychologists seemed particularly prone to view intellectual and personality test data as influential, while not relying heavily on adaptive behavior information. Support personnel tended to view intellectual information as being even more significant than did other professionals; they rated perceptual-motor tests as significant in influence as well. Analyses of ratings according to the decision makers' performance on a pretest measuring knowledge of assessment and measurement (RR 32) also revealed only a few differences. Individuals with higher scores attributed relatively greater influence to intelligence scores and discrepancies between intelligence and achievement; they were much less likely to attribute significance to language test scores. While little significance was attributed to socioeconomic status regardless of pretest score, those with lower scores were somewhat more likely to indicate that such factors played a role in the decisions they made.

11. To What Extent Do Various Factors Actually Influence Decision Making?

Findings:

a. Both objective and subjective factors influence classification decisions for students.

b. The mere fact that a student was referred has a major influence on subsequent decision making; there is a very high probability that a referred student will receive some type of placement within special education.

c. Achievement measures are the most influential of all objective test data for identification and classification decisions. However, many subjective factors temper the influence of objective data.

Data Sources:

- Comparative study of referral procedures (RR 75)
- Analysis of educators' classification decisions (RR 52)
- Longitudinal study of decision making (RR 44)
- Survey of special education directors (RR 60)
- Surveys of regular education teachers (RR 29, 39)
- Decision-making simulation study (RR 17, 18, 19, 26, 32, 80)

Evidence:

Statistical analyses of decisions made about students provided information on the types of variables actually used to classify students as LD or non-LD (RR 52). Both teachers and school psychologists primarily examined students' performances on achievement measures, with less emphasis given to cognitive measures, aptitude-achievement discrepancy, and school-related aptitude measures. In contrast, the naive group apparently gave greater consideration to individual subtests. However, these results examine only the emphasis given to various types of objective data.

Fifty-one percent of the decision makers participating in the decision-making simulation identified a referred student, whose test data were all average, as eligible for special education (RR 32). This in itself indicates that decision makers are influenced by factors other than objective test data. Further, regular educators were more likely to identify the student as eligible for services than other professionals. Learning disability was the most commonly used classification (RR 17). The classification decisions reflected the common tendency to label a student as LD when there is nothing to indicate any other handicap (RR 80). The most influential piece of

information appeared to be the referral statement of the problem (RR 19, 26). Regular class plus resource room was the most commonly recommended placement. The students were expected to have future difficulties in reading (RR 18). For the most part, having greater training, experience, and knowledge about the assessment and decision-making process did not lead to decisions that were consistent with the data available. It is apparent that some variable or variables were operating in the decision-making process to temper the influence of objective data.

Another indication of the influence of information other than objective test data is the finding that teachers hold significantly lower expectations for siblings of LD students than they do for siblings of nonhandicapped students (RR 29, 39). Also, naturalistic observations indicate that in cases where students have identical academic difficulties but are in different districts, identification and classification decisions often are very different (RR 44). This variability has been documented nationwide, even though there is a strong tendency overall for students to be declared eligible for special education once they are referred (RR 60).

In fact, a great deal of data has suggested that the fact that a student is referred for a psychoeducational evaluation may be the most biasing factor in the decision-making process. Referrals made by teachers seem to be treated differently from referrals that result from student performances on direct measures of reading, spelling, and written expression (RR 75): about one-third of the teacher-referred students who were identified as LD by decision makers met the

established district criterion for LD eligibility while about 80% of the performance referrals met the criterion. It is as if decision makers feel they must do something to help a teacher who has made a referral; classification of the student and placement in special education is the manner in which help typically is provided.

12. What Are Some Effects of Classification Decisions?

Findings:

a. The decision to classify a student as handicapped has its price tag. Although students may receive special assistance, being labeled as "special" influences teachers' expectations, especially those of classroom teachers.

b. Labels affect both teachers' and peers' attitudes toward the handicapped child; in some cases, negative effects may be reduced by stressing the child's competencies.

Data Sources:

- Surveys of special education teachers (RR 31, 43)
- Survey of fourth grade students (RR 16)
- Disturbing Behavior Checklist validation study (RR 8)
- Survey of undergraduate students (RR 4)
- Survey of regular education teachers and trainees (RR 3)

Evidence:

Special education teachers who reviewed case studies of students seemed to make decisions about a student's classroom placement and future performance on the basis of the child's perceived competence (RR 31). Similarly, performance of handicapped students on a math task was attributed to competence as well as to the labeled condition by special education teachers (RR 43). These results suggest that it may be possible to reduce the negative effects of special education

labels by pointing out the competencies of a student. However, this may be less true for regular education teachers, who have been found to be influenced by labels to a greater extent than teacher trainees (RR 3).

An instrument has been developed that has positive psychometric qualities for determining the "disturbingness" of behaviors characteristic of mildly handicapped students (RR 8). Use of this scale has indicated that label-inappropriate behavior is more disturbing and less accepted than label-appropriate behavior (RR 4).

Students' ratings of a peer also appear to be influenced by the label assigned to the peer. However, the presentations of positive attributes of the labeled peer produce favorable ratings when compared to neutral ones, thus suggesting that integration of a LD student in a regular classroom can be facilitated by representing the student to be integrated in a positive manner (RR 16).

# Chapter 7

## What Happens in the Team Decision-Making Process?

This chapter summarizes IRLD research findings related to the issue of the team decision-making process. Seven specific questions are addressed in this chapter:

- Who participates in team meetings?
- What are the roles of regular education teachers and parents in team meetings?
- How much time is spent in team decision making?
- What is discussed at team meetings?
- How do team meeting participants view the decision-making process?
- To what extent are team meetings effective?
- To what extent do students benefit from the team decision-making process?

For each question, the major findings are summarized and the data sources from which the findings were obtained are listed (generally ordered in terms of recency). Specific evidence for the major findings then is presented.

### 13. Who Participates in Team Meetings?

Findings:

-- While team membership is highly variable, parents, classroom and special education teachers, school psychologists, and administrators are considered vital to team functioning.

Data Sources:

- Longitudinal decision-making study (RR 44)
- Team meeting observations (RR 40)
- Survey of special education directors (RR 14)
- Survey of model LD programs (RR 11)

Evidence:

The number of individuals actually participating in team meetings is highly variable, ranging from one to 16 (RR 11, 14). Typically, however, about seven team members are present (RR 11, 14, 40, 44). In some specific locations, the average is much lower, with numbers ranging from two to seven (RR 40).

Variability in the roles of individuals included on teams also is great. A sample of 99 special education directors identified 34 different professional roles (RR 14); 38 model LD programs named 30 different professional roles (RR 11). Overall, the school psychologist and regular education teacher were included most frequently, followed by a special education teacher and some type of administrator (RR 11, 14, 40, 44).

In some cases, team membership varied as a function of the type of decision being made (RR 14). In a few cases, team membership varied as a function of the student's presenting problem.

When special education directors (RR 14) and team meeting participants (RR 40) were asked to identify four professionals they would want included in a team meeting limited to four professionals as well as parents, a variety of roles were included. Each of the roles represented in actual meetings was listed at least once as being a desirable member of the hypothetical team. On the average, the most frequently included professionals were regular education teachers, LD teachers, school psychologists, and principals or other administrators.

14. What Are the Roles of Regular Education Teachers and Parents in Team Meetings?

Findings:

a. Although parents and classroom teachers participate only nominally in the decision-making process, team members report that information from them has a major influence on their final classification decisions.

b. Most students declared eligible for special education services spend at least half of their day in mainstream classrooms; yet regular education teachers often do not make recommendations for placement or instruction.

Data Sources:

- Longitudinal decision-making study (RR 44)
- Team meeting observations (RR 40)
- Survey of special education directors (RR 14)

Evidence:

Ten-second interval observations of team meetings revealed that the average amount of participation by classroom teachers was 27% (RR 40). Comments on questions directed toward regular education teachers averaged only six per meeting. These most often related to classroom data or subjective/irrelevant information. When regular education teachers spoke during team meetings, most often their comments dealt with subjective/irrelevant information or classroom data; very little time was spent discussing test results or their recommendations regarding placement.

Parents present at team meetings never were asked either their understanding of the meeting's purpose or their expectations for the meeting (RR 40, 44). Parents rarely were asked for their input during meetings, and then only for verification of an observed problem. In only 27% of observed meetings was the language at a level judged to be

understandable to typical parents. Technical terms were not defined; jargon abounded. Furthermore, parents were among the least active participants in proposing options and in suggesting goals and methods. In fact, special education directors indicated that meetings often were held without parents present in order to reach a school consensus on a decision to be presented to parents (RR 14).

15. How Much Time is Spent in Team Decision Making?

Findings:

a. The team decision-making process is lengthy and time consuming.

b. Variability in the amount of time devoted to team meetings is great; however, on the average, one team meeting about one student takes approximately 45 minutes.

c. Variability in the amount of time devoted to team decision-making related activities is great; however, on the average, testing and paperwork require about five hours per student.

Data Sources:

- Longitudinal decision-making study (RR 44)
- Team meeting observations (RR 40)
- Survey of special education directors (RR 14)

Evidence:

Special education directors across the U.S. reported on team meetings ranging from 5 minutes to 16 hours, with the average being 50 minutes (RR 14). Most of the observed team meetings were between 30 and 45 minutes in length (RR 40), while other specific samples of meetings averaged 40 to 45 minutes.

Team members most often estimated that they spent about one hour preparing for a single team meeting. The range was from two minutes

to 9 hours. Most team members indicated that the preparation time was adequate; only 7% indicated that it was excessive.

Longitudinal observations of individual cases also indicated considerable variability in the amount of time devoted to assessment (RR 44). Testing time alone ranged from 4½ to 13½ hours. When meetings of the team, interviews with parents, and paperwork were added, and multiplied by the number of team participants, time estimates for individual cases ranged from 9 hours (Student A) to 156 hours (Student B). Using these figures and 1980 estimates of hourly rates for professional services, the estimated cost for Student B would be over $3,000. Comparison of the benefits accrued to the two students indicated that they were either not different, or perhaps somewhat in Student A's favor. The process of declaring Student B eligible for service took three months, during which time the student experienced continuous failure in his regular class placement, without the benefit of services that had been available to him prior to referral. Student A, on the other hand, was assessed, declared eligible for service, and placed in a program to remediate his skill deficiencies within a few weeks of referral.

16. What is Discussed at Team Meetings?

Findings:

a. In general, the team decision-making process is extremely variable; it is difficult to characterize the functioning of a "typical" team.

b. Most team meeting time is spent in reporting test results in round-robin fashion; discussions of interventions attempted in the classroom are rare.

c. Very little time is spent in interpreting data, proposing alternative outcomes, or evaluating alternative outcomes.

d. In general, team efforts appear to be directed at verifying the existence of problems cited by teachers (labeling the child) rather than considering alternative instructional interventions.

Data Sources:

- Longitudinal decision-making study (RR 44)
- Team meeting observations (RR 40)

Evidence:

About half of team meeting time is spent discussing test information (RR 40). Teams spend about twice as much time discussing academic information as they do discussing behavioral information. Almost no time is spent discussing physical or medical data. Nearly all meetings are devoted primarily to the presentation and discussion of classroom data, scores on achievement tests, and scores on intelligence tests. Little time is taken to apply assessment data to making decisions about classroom management and instruction. Advice to teachers is given incidentally or indirectly.

In longitudinal observations of team meetings, some teams used the meetings as an opportunity to share information, examine alternatives, and discuss options, whereas other teams were indecisive, expressing lack of clarity as to the purpose of their activities (RR 44).

When service options were discussed at meetings, the number of options considered ranged from one to five (RR 40). The number of service options finally decided on by the team ranged from one to three. There was some relation between the number of options discussed and the number adopted. However, more important was the

extent to which service options were distributed across the range of available options. Options for services usually were suggested by the psychologist, principal, or special education teacher. The least active team members in discussions of service options were parents, regular classroom teachers, and Title I teachers.

Although intervention statements occurred relatively infrequently during team meetings, those that did occur most often were concerned with desired outcomes or ways to achieve outcomes (RR 40). School psychologists and LD teachers were most active in making these statements. Principals were least active in generating goal and method statements. Considerable variation across meetings was evident, with team members making as few as two such statements at one meeting and as many as 39 at another. Greater numbers of goal and method statements were associated with factors such as the presence of parents who actively participated in the meeting and the completion of the IEP form while the meeting was in progress.

Timing of programs was discussed quite regularly at team meetings, but there was considerable variation in how detailed the specifications were, both with regard to the timing of service options and the scheduling of program review (RR 40). The principal, school psychologist, special education director, and LD teacher most often were involved in discussions of program timing and scheduling of program reviews.

Few statements were made that could be considered to be recommendations to parents (RR 40). Such statements were observed in only half of the team meetings at which parents were present.

Participants in team meetings indicated that their contribution to the meetings almost always involved commenting on data presented by others (RR 40). From 40% to 45% of meeting participants indicated that they did not propose alternative outcomes or evaluate alternative outcomes. In terms of the time they participated, team members indicated that they spent most of their time either presenting data or commenting on others' data. Very few individuals indicated that most of their time was spent in evaluating alternative outcomes. It is notable that less than 10% reported that most of their time in the meeting was devoted to interpreting data.

17. How Do Team Meeting Participants View the Decision-Making Process?

Findings:

a. In general, team members express satisfaction with the decision-making process.

b. Despite the time required for team meetings and the amount of data presented, team members generally do not change their perception of the student as a result of the meeting.

c. Very few team members question the adequacy of the team process for helping students, even though some members have specific concerns about scheduling, time, and other issues.

Data Sources:

- Longitudinal decision-making study (RR 44)
- Team meeting observations (RR 40)

Evidence:

Team members generally reported that they were satisfied with the outcome of team meetings and furthermore felt that they were an important part of the process (RR 40, 44). They viewed the team

approach as an effective way to make decisions about students. Although a major purpose of team meetings is to foster sharing of information among a variety of sources, the majority of team members reported that their view of the child had not changed as a result of the meeting. These views were expressed by regular education teachers as well as other professionals. Yet, interviews with teachers suggested that perhaps less satisfaction was felt than initially was apparent (RR 44). Most often, the team decision resulted in the regular classroom teacher retaining primary responsibility for coordination, planning, and implementation of the student's program. This outcome was viewed with concern by several teachers. They perceived their responsibilities to the referred student as a tremendous effort in extra time and energy, often with minimal results. In several instances, although the problem that precipitated the referral was not ameliorated, teachers appeared reluctant to request further information or help from the team. The teachers viewed the team decision as irreversible, and the problem presented by the student as one they would have to resolve independently or ignore.

On the surface, parents also had a generally positive view of the decision-making process (RR 40, 44). A typical response from interviewed parents was that they felt the school was concerned and doing its best to help the child (RR 44). However, questioning of parents also revealed that they did not appear to understand the decision-making process, the purpose of the meetings, and the results presented at the meetings. Parents expressed surprise that so little of the team meeting was devoted to discussion of classroom performance.

18. To What Extent Are Team Meetings Effective?

Findings:

a. Team functioning is generally unsystematic; few team meetings meet basic criteria for effective team decision-making practices.

b. In most meetings, the issue of the least restrictive environment is not judged explicitly. The typical procedure involves presentation of test data followed by a placement recommendation.

Data Sources:

· Team meeting observations (RR 40)

Evidence:

Criteria for effective team functioning, formulated from a review of the literature, include: (a) clear statement of meeting's purpose, (b) clear definition of roles of team members and encouragement of their participation, (c) data presented are relevant to the decision to be made, (d) all members participate actively in all decisions, and (e) structured separation of decision-making activities. Observed meetings rarely met these basic criteria of effective team decision-making practices.

The purpose of observed meetings seldom was stated explicitly (RR 40). Frequently, meetings started with a statement of the reason for referral. The roles of team members never were defined clearly and participation by all team members never was encouraged. Little relationship was found between the data presented and the decision made by the team. More time was spent describing needs than generating alternative solutions. Further, it was difficult for evaluators to agree on the extent to which statements made actually

were proposed alternative solutions. Team members did not participate equally in all aspects of decision making; some team members clearly were more active in some decisions than other team members. For example, regular class teachers rarely proposed options. There was not a clear delineation of activities. In none of the meetings was there a clearly identifiable time set aside for generating alternatives and identifying criteria for evaluating them.

The extent to which the least restrictive environment was considered in making placement decisions also was examined. In observed meetings, the least restrictive environment was never explicitly stated. It was not apparent that the concept was ever employed in reaching a placement decision. In general, teams presented data and then someone on the team recommended a placement. The efficacy of the placement seldom was discussed. Decisions were made in nearly all meetings. Yet, it was difficult to identify who made the decision or the specific nature of the decision. Team members never challenged decisions made at meetings.

19. To What Extent Do Students Benefit from the Team Decision-Making Process?

Findings:

a. The results of the team meeting process are positive for some students and negative for others.

b. A time-consuming decision-making process does not necessarily result in benefits for students or teachers.

Data Sources:

- Longitudinal decision-making study (RR 44)

Evidence:

In the majority of cases followed longitudinally, the team decision-making process did not result in a substantive change in program or services for the student (RR 44). In several instances, however, positive benefits did accrue to students. These included more frequent home-school contacts, a greater degree of parental involvement in remedial instruction, counseling, increased tutoring services and use of volunteer aides, and closer monitoring of student progress. It is unlikely that these would have occurred had the student not been called to the attention of the decision-making team. The decision-making process resulted in negative outcomes for other students who experienced a loss of services. Despite similar referral problems across observed cases, there were substantial differences in outcomes across different school districts. The situation-specific nature of the decision-making process is again highlighted in these findings.

Those students for whom a substantive change in program was implemented also did not always benefit equally. The decision-making process often was very time consuming, even requiring excessive times to decide to provide services to students who had been declared eligible for programs in other school districts.

# Chapter 8

## Data Sources

This chapter provides a summary of the data sources and research procedures used to obtain the research findings presented in the previous chapters. An overview of the data sources is provided in Table 1. The IRLD research reports in which more detailed explanations may be found are listed in the table, as are the numbers of corresponding research questions. The data sources are ordered within this chapter (and the table) according to the frequency with which they are cited as sources of evidence for various research questions.

### Longitudinal Study of Decision Making (RR 44)

Naturalistic observation procedures and interviews were employed during 1979-80 to study the assessment and decision-making events that occurred in the cases of seven students from the time of their referral for special education assessment to the time when an educational program was implemented or a decision was made not to provide special education services. The seven cases were selected from five elementary schools within a midwestern metropolitan area. Students included were ones who were referred for eligibility and placement evaluations, and who were likely to be involved in the entire decision-making process in their schools. (The likelihood of the student being involved in the entire decision-making process was determined by interviews with school personnel and the nature of the student's referral problem.) Students who were clearly mentally retarded or sensorially impaired were not included.

Table 1

Identification/Classification Research Data Sources

| Data Source | Research Reports | Questions |
|---|---|---|
| Longitudinal study of decision making | 44 | 2, 3, 7, 11, 13, 14, 15, 16, 17, 19 |
| Observations of team meetings | 40 | 3, 8, 10, 13, 14, 15, 16, 17, 18 |
| Survey of special ed directors | 14 | 1, 3, 10, 13, 14, 15 |
| Survey of model LD programs | 11 | 1, 3, 4, 6, 13 |
| Decision-making simulation | 9, 17, 18, 19, 26, 32, 33, 80 | 3, 4, 8, 10, 11 |
| Analyses of classification decisions made by individuals (school personnel) | 52 | 6, 8, 10, 11 |
| School record reviews | 45 | 3, 4, 7 |
| Survey of LD teachers | 66, 108 | 3, 5, 6 |
| Psychometric assessment of low achievers | 13, 15, 69 | 4, 6, 7 |
| Comparative study of referral procedures | 75 | 7, 9, 11 |
| Survey of educational personnel | 28 | 3, 4 |
| Survey of regular ed teachers | 29, 39 | 5, 11 |
| Analyses of LD criteria | 98, 99 | 6, 7 |
| Analyses of classification decisions made by individuals (researchers) | 51 | 6, 8 |
| Comparison of direct measure eligibility criteria | 89 | 6, 9 |
| Analysis of predictive efficiency of direct measures | 104 | 6, 9 |
| Instructional time observations | 95 | 2 |
| Comparison of two ability tests | 36, 38 | 4 |
| Study of examiner familiarity effects | 42, 54, 70, 110, 134, 135 | 4 |
| Survey of LD experts | 77 | 5 |
| Instructional planning surveys | 27 | 5 |
| Theoretical analyses of LD criterion | 7 | 7 |
| Analyses of difference score reliabilities | 37 | 7 |
| Analyses of subtest scatter | 46 | 7 |
| Analysis of psychometric assessment data | 47, 69 | 7 |
| Analyses of LD criteria | 92 | 7 |
| Analysis of performance instability | 127 | 7 |
| Technical characteristics of direct reading measures | 20 | 9 |
| Technical characteristics of direct spelling measures | 21 | 9 |
| Technical characteristics of direct written expression measures | 22 | 9 |
| Direct measure assessment of low achievers | 71 | 9 |
| Longitudinal study of direct measures | 49 | 9 |
| Developmental study of direct measures | 87 | 9 |
| Survey of educational personnel | 25 | 10 |
| Survey of special ed directors | 60 | 11 |
| Survey of regular ed teachers and trainees | 3 | 12 |
| Survey of undergraduate students | 4 | 12 |
| Disturbing Behavior Checklist validation | 8 | 12 |
| Survey of fourth grade students | 16 | 12 |
| Survey of special ed teachers | 31 | 12 |
| Survey of special ed teachers | 43 | 12 |

Data were obtained by (a) observing meetings at which the target student was discussed, (b) reviewing reports or other written documents about the student, and (c) interviewing key school personnel and the student's parent(s). Written notes on their observations and interviews were maintained by the researchers; these were used to develop descriptions of the events that occurred in each case.

Observations of Team Meetings (RR 40)

During 1978-80, 38 different team meetings in 16 upper midwest school districts were observed and videotaped in order to describe placement team meetings and their functioning. All meetings were ones at which decisions reached by team members were to be implemented for actual students. Two of the observed meetings were in urban schools, 18 were in suburban schools, and 18 were in rural schools. Twenty-eight meetings were held to make decisions about a male student and 10 about a female student. Thirty-two meetings were for elementary students and six for junior high level students.

Videotaping allowed for (a) more efficient data collection, (b) more in-depth analysis of the meetings, and (c) the availability of a common sample of meetings for all data analyses. Videotaping was completed either by one Institute investigator or by school personnel trained specifically in a standardized methodology. Prior to the meetings, permission slips were collected from all team members and a standard introduction/explanation was read. Team members were asked to introduce themselves by role at the start of the meeting. Only one kind of interruption took place during the meetings; meetings that exceeded 30 minutes were interrupted for two minutes to change tapes.

All tapes were transcribed; transcriptions were verified by an independent investigator. In addition, a subset of meetings was observed without the introduction of videotaping to verify that the videotaping did not significantly affect the process.

At the conclusion of each meeting, team members were asked to complete a brief set of questions regarding their perceptions of their role in the meeting, and their views of the extent to which specific factors influenced the outcome(s) of the meeting.

In analyzing the data, research questions were addressed using different methods. Not all meetings were appropriate for all questions. For example, meetings in which no teacher was present were not used for the research question on teacher participation. Data scoring procedures included counts and interval recordings as well as judgments (e.g., ratings on Likert-type scales).

Survey of Special Education Directors on Assessment and Decision-Making Practices (RR 14)

During 1979, 100 directors of special education from 49 states provided information on assessment and decision-making practices in their school districts, which were located in rural, urban, and suburban settings, and varied widely in total population served and number of pupils attending elementary classes. Elementary class enrollment ranged from less than 100 pupils to over 50,000 pupils. The average per-pupil expenditure for regular education services was $1391.24; the average expenditure for special education services was $2205.50.

In addition to obtaining background information about the school district, the survey form elicited information on (a) the typical

composition of the teams involved in making screening, placement, and instructional programming decisions, (b) the sequence of steps in the assessment and decision-making process, (c) factors thought to influence the outcome of the team decision-making process, and (d) general concerns regarding placement team decision making and the development of the individualized educational plan (IEP).

Survey of Model LD Programs (RR 11)

During 1978-79, 44 model LD programs (Child Service Demonstration Centers) located in 26 states responded to a survey on their assessment and decision-making practices. All programs were ones funded during 1978-79 by the Bureau of Education for the Handicapped.

A two-page survey form was used to obtain information on (a) the definition of "learning disabilities" used in the identification of children to be served, (b) the kinds of data and the specific instruments used for the purposes of screening, placement, instructional programming, pupil evaluation, and program evaluation, (c) the typical composition of the team making placement decisions, and (d) the usual sequence of steps in the assessment/decision-making process. In addition, data were obtained on the date each center began, and the age range and number of children served by each program.

Decision-Making Simulation Study (RR 9, 17, 18, 19, 26, 32, 33, 34, 80)

During 1979-80, 224 professionals from public and private schools in Minnesota participated in a simulated decision-making study. All of these professionals previously had participated in at least two

placement team meetings in which classification decisions were made. Disciplines represented within the sample included 58 regular education teachers, 79 special education teachers, 31 administrators, 30 school psychologists, and 26 other support personnel (e.g., school nurses, social workers, etc.). Most of the sample worked in suburban settings; however, urban and rural settings also were represented. Approximately 75% of the sample was female.

Each subject began by taking a pretest designed to evaluate knowledge of assessment. The subject then was familiarized with the computer terminal that was used to provide requested assessment information. After the subject responded to several demographic questions presented on the terminal, the subject was given a referral folder in which selected naturally-occurring pupil characteristics (sex, SES, appearance, referral statement of problem) had been varied systematically. The subject then was allowed to select assessment information (including technical information on specific tests, quantitative test scores, and qualitative test performance) for approximately 25 minutes or until ready to make final decisions about the child. Information was available for 49 devices or procedures grouped within seven domains (intelligence tests, achievement tests, perceptual-motor tests, behavioral recordings, personality tests, adaptive behavior scales, and language tests). All test performance information presented was indicative of average student performance. A series of outcome questions regarding eligibility, diagnosis, prognosis, and other aspects of decision making were presented. In addition, each subject rated the influence of various factors on decisions that had been made.

Analyses of Classification Decisions Made by Individuals (School Personnel) (RR 52)

During 1979-80, 65 school psychologists, 38 special education (LD) teachers, and 21 university students (from mechanical engineering and business management classes) reviewed student assessment data and made decisions as to each student's classification as LD or non-LD. Student assessment data were presented to these individuals on forms containing the chronological age and sex of 18 fourth-grade students. The students' actual test scores were presented in five domains: (a) aptitude (WISC-R, Woodcock-Johnson Tests of Cognitive Ability), (b) academic achievement (PIAT, Stanford Achievement - math calculation and math concepts, Woodcock-Johnson Tests of Achievement), (c) perceptual-motor (Bender, Beery Developmental Test of Visual-Motor Integration), (d) self-concept (Piers-Harris), and (e) behavior problems (Peterson-Quay). Across these five domains, test scores were provided on 41 variables.

After reviewing the information, individuals were asked to decide whether the student was LD or non-LD and the extent to which they had confidence in the decision. In addition, each individual rated the extent to which different factors affected the decisions.

The decisions made by the school psychologists, LD teachers, and university students were analyzed relative to the school classification of each student, relative to two achievement deficit levels (1.0 and 1.5 SD from grade level), and relative to two ability-achievement discrepancy levels (1.0 and 1.5 SD discrepancy). Judges' accuracy and leniency, and intergroup agreement were examined.

School Record Reviews (RR 45)

During 1979, the school records of 124 students at a private day school for learning disabled children were searched in an attempt to describe one group of students labeled LD. The school, located in a predominantly white middle to upper class suburb of a major midwestern city, serves mainly students from the suburban area. The philosophy of the school is one of diagnosis, treatment, and progress evaluation. Instruction is individualized according to the perceived needs of the student, based on assessment data, with the aim of returning the student to his or her home school within two years. Students are grouped by age into large groups of 10 to 15 students, with a teacher/student ratio of approximately 5 to 1.

Information available in the students' records included: (a) demographic data; (b) medical history information; (c) parent estimates of developmental milestones, the child's ability to get along with others, and behavioral problems; (d) teacher ratings on behavioral checklists; (e) intelligence test data; (f) perceptual-motor test data; and data from norm-referenced and criterion-referenced measures of academic achievement. All data were examined descriptively to look for communalities, and when possible current LD criteria were applied to the data.

Psychometric Assessment of Low Achievers (RR 13, 15, 69)

During 1979, samples of 50 school-identified LD students and 49 low achievers who had not been identified as LD by their schools were administered a battery of psychoeducational tests. All students were in fourth grade. All non-LD students were low achievers; they had

scored at or below the 25th percentile on the Iowa Tests of Basic Skills administered during the fall of 1978. LD students were ones who had been identified by their schools as LD within six months of the time at which they were selected to participate in the study. The students were from nine school districts within and surrounding a large metropolitan area in the midwest. The two groups were similar in terms of age, sex, parental marital status, father's SES, mother's SES, and family income.

All testing was completed by qualified psychometricians and occurred during approximately the same period (January to May). The tests administered to students were the Woodcock-Johnson (W-J) Psycho-Educational Battery, Tests of Cognitive Ability and Tests of Achievement, the Wechsler Intelligence Scale for Children-Revised (WISC-R), the Peabody Individual Achievement Test (PIAT), selected subtests of the Stanford Achievement Test, the Bender Visual-Motor Gestalt Test (BVMGT), the Developmental Test of Visual-Motor Integration (DTVMI), the Piers-Harris Self-Concept Scale, and the Peterson-Quay Behavior Problem Checklist. This group of tests was selected to reflect those devices commonly used with LD youngsters. Only 7 of the 10 subtests of the Woodcock-Johnson Tests of Achievement were administered. Administration of the total of 49 subtests or tests to the 99 students allowed for the comparison of the two groups' performances in five domains, as well as by subtest or test: cognitive (WISC-R, W-J Cognitive Ability), academic achievement (PIAT, W-J Achievement), perceptual-motor (BVMGT, DTVMI), self-concept (Piers-Harris), and behavior problems (Peterson-Quay).

The test scores of 80 of the students (40 low achievers and 40 school-identified LD students) later were analyzed separately to compare the two groups on a specific operationalization of the federal guidelines. The criteria used involved only scores from the WISC-R and PIAT.

Comparative Study of Referral Procedures (RR 75)

Two referral procedures were compared during 1980-81 within six elementary schools. All schools were located within a 50-mile radius of a large metropolitan area in the Midwest, and were in small town, rural settings. School populations ranged from 110 to 696. Only grade 3-6 students were included in the comparative study.

Traditional teacher referral was one of the procedures included in the study. According to the school districts' guidelines, teachers first had to initiate an intervention with a potential candidate for referral. If the intervention plan failed, the student then could be referred for psychoeducational evaluation.

The second referral procedure involved weekly measurement of performance in reading, spelling, and written expression. Students who had been identified as high risk because they had scored at or below the 15th percentile on a screening measure of written expression were tested weekly, over a 10-week period, on measures of reading, spelling, and written expression. Each week, student performance was scored and plotted on a graph. A student was referred if his/her performance in at least two of the three academic areas was at a level more than two standard deviations below the mean performance of students in the same grade from a local normative sample.

The students referred by the two procedures were compared with respect to referral rate, cognitive functioning, achievement level, social behavior, sex differences, and identification as learning disabled.

Survey of LD Teachers on Their Beliefs About LD Students (RR 66, 108)

During 1980-81, a national sample of 127 LD teachers provided information on several factors related to their beliefs about LD students and instructional procedures that work with them. The teachers were from 36 states, the District of Columbia, and Canada, and were employed in urban, suburban, and rural communities. Most of the teachers were working with elementary students, and most were female.

A two-page survey form elicited information on the teachers' beliefs about LD students and effective instructional interventions. Six free-response items asked for descriptions of: (a) major characteristics of LD students, (b) major reasons children become LD, (c) information most useful in determining level and amount of service needed by LD students, (d) what works best for teaching reading to LD students, (e) what works best for teaching mathematics to LD students, and (f) what works best for teaching written language to LD students. For each response to these items, subjects were instructed to indicate the major soruce of their information (experience, books and journals, training, or other). The survey also presented seven statements about LD students and asked subjects to indicate their agreement with each of them on a four-point scale from "strongly agree" to "strongly disagree." In addition, subjects were asked to indicate the extent to

which 15 student characteristics were a problem in working with LD youngsters, using a four-point scale from "very significant problem" to "not a problem." Finally, the survey asked subjects to provide information about their backgrounds, the programs in which they were teaching, the children served, and their school district criteria for classification of a student as LD.

Survey of Education Personnel on Use of Assessment Devices (RR 28)

During 1978-80, three groups of educational personnel provided information about their use of assessment devices. The first group included 65 decision makers from Virginia; included were 31 school psychologists or school psychology interns, 15 regular or special education teachers, 8 support personnel (nurses, counselors, social workers, administrators), and 11 individuals who did not specify their role. These decision makers were presented with a list of 49 commonly used assessment instruments organized within seven domains (intelligence, achievement, perceptual-motor, behavioral recordings, personality, adaptive behavior, and language). They first were asked to rank order the five devices they most frequently used in assessing elementary-age students. Next, they were asked to rank order the five devices they used to assess students referred for academic problems. Finally, they were asked to rank the five devices they used most often to assess students referred for behavior problems.

The second group was made up of 159 of the educational personnel who participated in the decision-making simulation study (see p. 4); after receiving referral data on a hypothetical student who demonstrated either academic or behavioral problems, these individuals

used a computer terminal to select assessment data they wanted on the student. The third group included 44 model LD programs (see p. 3); they listed the specific devices they used to make screening, classification, intervention planning, and evaluation decisions.

Survey of Regular Education Teachers on Their Expectations for Siblings of LD Students (RR 29, 39)

Two samples of regular education teachers were surveyed regarding their attitudes and expectations for siblings of LD students during 1979-80. The first sample was considered to be a pilot study sample.

Pilot study teachers included 18 regular education teachers of students in grades K-5. They were from four school districts in two metropolitan areas in the midwest; 15 of the teachers were female. Average years of teaching experience was 15.2 (range = 8-28). These teachers rated 27 students in their classes who were younger siblings of LD and non-LD students; 11 boys and 16 girls were rated. All teachers had previously taught the older sibling of the rated students currently enrolled in their classes. In 16 cases the older sibling was LD and in 11 cases the older sibling was not LD.

The second sample of teachers included 16 regular third grade teachers from seven school districts in a large metropolitan area in the midwest; 14 of the teachers were female. Average age of the teachers was 36.4 years (range = 26-60) and average years of teaching experience was 11 (range = 3-20). Each teacher rated hypothetical younger siblings of four students who had been in their classes for the entire school year. Two of these students were school-identified LD students (one girl, one boy) and two were non-handicapped students (one girl, one boy).

A rating scale was developed to obtain information on the teachers' expectancies for the behavioral and academic performances of the students being rated. Measures of academic, motor, perceptual, behavioral, and socio-emotional functioning were included. Expectations for the child's overall progress and need for support services also were measured. All items were rated on a five-point scale from 1 (poor or deficient performance) to 5 (excellent or superior performance). In addition, each teacher was interviewed to obtain information on the teacher's opinion as to the major cause of learning disabilities and the extent to which LD children are able to learn as well as their "normal" peers when given appropriate support services.

Analyses of LD Criteria (RR 98, 99)

During 1981-82, analyses were conducted using 14 criteria for identification of learning disabilities. The criteria were applied to data from 48 school-identified LD children and 96 non-LD children. The children were obtained from two LD subsamples and four non-LD subsamples. Overall, the LD sample included 36 males (75%) and 12 females (25%) and had a mean age of 9 years, 3 months. The non-LD sample had a mean age of 10 years, 0 months); sex data were not available for two of the four subsamples. The non-LD sample included both low-achieving students and students who had been referred but declared ineligible for LD services, as well as students participating in criterion-validity studies for the Woodcock-Johnson Psycho-Educational Battery.

The students' data were entered into 14 criteria to determine the extent to which school-identified LD and non-LD children met each

criterion. Included in the criteria were six ability-achievement discrepancy definitions, four achievement deficit criteria (grade placement-achievement discrepancy), and four scatter criteria. Frequency analyses and factor analyses were used to examine the congruency across definitions in the numbers of students identified as LD. Analyses also were conducted to identify the characteristics that differentiated students classified by few criteria from those classified by many criteria. In addition, the correspondence between each criterion and actual school classification was examined by determining the correlations between school classification and the criterion.

Analyses of Classification Decisions Made by Individuals (Researchers) (RR 51)

During 1979, 18 educational researchers reviewed student assessment data and made decisions as to each student's classification as LD or non-LD. The researchers were individuals with backgrounds in assessment, decision making, and learning disabilities; 14 were doctoral students in school psychology or special education, 2 had doctoral degrees, and 2 had master's degrees in education. Student assessment data were presented to these individuals on forms containing the chronological age and sex of 99 fourth-grade students. The students' actual test scores were presented in five domains: (a) aptitude (WISC-R, Woodcock-Johnson Tests of Cognitive Ability), (b) academic achievement (PIAT, Stanford Achievement-math calculation and math concepts, Woodcock-Johnson Tests of Achievement), (c) perceptual-motor (Bender, Beery Developmental Test of Visual Motor Integration),

(d) self-concept (Piers-Harris), and (e) behavior problems (Peterson-Quay). Across these five domains, test scores were provided on 42 variables.

After reviewing the information, individuals were asked to decide whether the student was LD or non-LD and the extent to which they had confidence in the decision. Their decisions were analyzed relative to the school classification of each student, relative to two achievement deficit levels (1.0 and 1.5 SD from grade level), and relative to two ability-achievement discrepancy levels (1.0 and 1.5 SD discrepancy). Judges' accuracy and leniency, and inter-judge agreement were examined.

Instructional Time Observations of Referred Students (RR 95)

Four students were observed systematically for two entire school days each at three different times within the referral to placement process during 1980-81. The students were from four classrooms in three elementary schools in a suburban midwestern school district; three were male and one was female. The grade 1-3 students had been referred by their teachers (all female) to their schools' child study teams for consideration for special education evaluations.

Data were recorded on 53 variables within six categories in 10-second intervals to examine changes in the nature of instruction and academic responding time as a function of going through the referral-to-placement process. The six categories included activity, task, teaching structure, teacher location, teacher activity, and student response. Experienced coservers coded the instructional environment and student responses for each student for six full days.

The first two days of data were collected before the child study team met to consider the referral. The next two days of data were collected approximately one month after an IEP had been written for the student. The last two days of data were collected approximately two months after the IEP had been specified.

Comparison of Two Ability Tests (RR 36, 38)

During 1979-80, psychometric and theoretical analyses were conducted on the test scores of 50 fourth-grade elementary students. All students had been identified as LD by the school districts they attended within six months of the time they were tested on the WISC-R and Woodcock-Johnson Tests of Cognitive Ability.

The students' scores on the Woodcock-Johnson and WISC-R were compared, with emphasis on correlations and mean differences. In addition, the Woodcock-Johnson performance of the LD students was compared to that of the same-grade normative sample. Further, the slopes of growth curves on the cognitive ability subtests, derived from the normative sample, were examined.

Study of Examiner Familiarity Effects on Handicapped Children's Test Performance (RR 42, 54, 70, 110, 134, 135)

During 1980-83, asscciates of Minnesota's Institute conducted a series of studies on the effects of examiner familiarity and task demands on the test performance of handicapped children. The specific procedures and subjects differed for each study; these are detailed below.

Study 1 (RR 42). A sample of 34 preschool language handicapped students (21 boys, 31 girls) were tested twice within a period of two

weeks - once by their classroom teachers and once by a stranger certified in early childhood education. Three devices were used to assess speech or language functioning.

Study 2 (RR 54). A sample of 79 preschool language handicapped students were tested twice on three tasks related to speech or language functioning. Examiners were either familiar (their teachers) or unfamiliar (but, certified in early childhood education). For one test, some examiners were to exercise their own judgment in determining the qualitative nature and frequency of feedback given to the child being tested, while other examiners were required to follow a procedure that allotted a constant amount of response time by the child being tested.

Study 3 (RR 70). Videotapes of a sample of 15 preschool language handicapped students being tested by either familiar or unfamiliar examiners were analyzed by two trained observers. Examiner and examinee behavior was coded according to examiner talk, examinee talk, and examinee visual behavior.

Study 4 (RR 110). A sample of 22 language-handicapped preschoolers (17 boys, 5 girls) participated. They were assigned randomly to either two professionally familiar examiners or two unfamiliar examiners. For each student, one of the two examiners took time to become personally familiar with the student.

Study 5 (RR 134). A sample of 32 preschool and 32 school-age students were tested twice during a period of two weeks, once by a familiar examiner and once by an unfamiliar examiner. Half of the students in each age group was language handicapped.

Study 6 (RR 135). Videotapes of a sample of 22 language-handicapped preschoolers being tested by familiar and unfamiliar examiners were observed by two certified speech clinicians. The speech clinicians rated each examinee's performance in the familiar and unfamiliar conditions.

Survey of LD Experts (RR 77)

During 1975 and 1981, surveys on learning disabilities were completed by researchers, policy makers, and teacher trainers who had been identified by peers as being on the "cutting edge" of research and programming in learning disabilities. The 1975 respondents included 91 individuals; the 1981 respondents included 149 individuals, 29 of whom also had been in the 1975 sample.

A one-page questionnaire was used to elicit opinions regarding the existence, prevalence, and identification of learning disabilities. All respondents were asked for permission to quote their responses.

Instructional Planning Surveys (RR 27)

Samples of teachers and school psychologists were surveyed during 1979 regarding the use of assessment procedures in planning instructional programs for handicapped students. A group of 79 LD lead teachers, coordinators, and supervisors, and a group of 36 school psychologists were asked to indicate the greatest needs of LD students, as part of a larger survey, by ranking four listed needs (academic skills, classroom behavior, self-image, and others). All participants were from Minnesota. The majority of the teachers were female and the average years of teaching experiences was 13.2. The

majority of school psychologists were male and the average number of years as practicing psychologists was 6.3; about one-third indicated they had an average of three years teaching experience.

Theoretical Analyses of LD Criterion (RR 7)

During 1979, both hypothetical data and actual student data were entered into various formulae in order to examine the utility of two procedures for determining severe discrepancy levels. Hypothetical data included cases with theoretical grade placements of 1, 3, 5, 7, 9, and 11, theoretical IQs of 80, 90, 100, 110, and 120, and chronological ages of 6-0, 6-3, etc. Actual student data were from 130 students identified as SLD based on Florida operational criteria.

Two criteria were examined. The first was the U.S.O.E. formula for determining severe discrepancy levels; the second was an alternative formula that represented a 50% discrepancy at various IQ and CA levels.

Analysis of Difference Score Reliabilities (RR 37)

During 1980, data obtained from 99 low achievers were examined in terms of the reliability of various difference scores. All students had been tested during 1979 when they were in fourth grade. They were from nine school districts within and surrounding a large metropolitan area in the midwest. Data were available for the students' performances on 42 different subtests or tests. Correlations between selected "ability," "aptitude," and "achievement" measures were calculated, as were reliabilities of differences between them.

Analysis of Subtest Scatter (RR 46)

During 1980, analyses were conducted on the scatter in cognitive ability subtest scores of 3566 students in grades 1-12 from the standardization sample of the Woodcock-Johnson Psycho-Educational Battery. Three indices of subtest scatter were computed for each student: (a) highest subtest W-score minus lowest subtest W-score, (b) highest subtest scaled score minus lowest subtest scaled score, and (c) pair-wise subtest W-score differences.

Analysis of Psychometric Assessment Data (RR 47, 69)

During 1980-81, a study was conducted to examine the extent to which identification as LD is a function of the definition used, and the extent to which different classifications would result from the use of different definitions. Fifty-one students referred for psychological evaluation as a result of learning difficulties in school were the subjects of this study. Thirty-three boys (65%) were included in the sample. The average age of the students was 8 years, 9 months; the youngest child was 6.6 years old and the oldest was 12.6 years old. All of the students were from one school district in Minnesota.

The school district criteria for determination of "severe discrepancies" and the "existence of special learning disabilities" in grades 1.5 through 6.9 were based on Woodcock-Johnson (WJ) performance measures. If a child's test profile yielded a "severe deficit" functioning level, the student was considered eligible for LD service. Additional testing in reading and mathematics was considered appropriate, if a "moderate deficit" is indicated by the

administration of the W-J aptitude and achievement clusters. By these criteria, school personnel identified 24 of the 51 students (47%) as eligible for LD services.

The average age of students identified as LD ($\bar{X}$ = 8 years) was not statistically different from the average age of the students not identified as LD ($\bar{X}$ = 9 years). Seventy-one percent (i.e., 17) of the LD students were boys; 60% (i.e., 16) of the non-LD students were boys; these percentages were not statistically different.

As part of the diagnostic assessment, each student was administered several psychometric devices. In addition to the W-J, the Wechsler Intelligence Scale for Children - Revised (WISC-R) and the Peabody Individual Achievement Test (PIAT) were given. Of interest was the extent to which children identified as LD by application of the W-J "severe deficit" criterion differed in other psychometric characteristics (i.e., WISC-R and PIAT performance) from children not identified.

The test scores of the 51 students also were analyzed to compare the students identified as LD and the students not identified as LD on a specific operationalization of the federal guidelines. The criteria used involved only scores from the WISC-R and PIAT.

Analyses of LD Criteria (RR 92)

During 1981-82, analyses were conducted using 17 criteria for identification of learning disabilities. The criteria were applied to data from 99 fourth-grade low achievers (50 of whom were labeled as LD) and 248 students enrolled in regular third, fifth, and twelfth grade classrooms. All students were from urban or suburban school districts in a midwest metropolitan area.

The students' data were entered into the 17 criteria to determine the extent to which students in the normal and low-achiever groups met the criteria. Included among the criteria were seven ability-achievement discrepancy definitions, four low achievement definitions, and six scatter definitions.

Analysis of Performance Instability (RR 127)

During 1981-82, 87 students from seven New York City public schools were administered direct measures of reading achievement. In one analysis, performance instability across three testings was compared for 50 students classified as emotionally handicapped (EH) and 37 students classified as learning disabled/brain injured (LD/BI). In a second analysis, performance instability across 28 to 47 testings was compared for a subsample of 43 of the students (24 EH, 19 LD/BI).

Technical Characteristics of Direct Reading Measures (RR 20)

Three concurrent validity studies of direct reading measures were conducted during 1978-79 in order to examine (a) relationships between the direct measures and standardized achievement measures, (b) resource vs regular program differences in student performance, and (c) grade level differences in student performance.

In the first study, 18 regular class students and 15 LD program students in grades 1-5 from a suburban public school were tested on five direct measures of reading (words in isolation, words in context, oral reading, cloze comprehension, and word meaning) and two standardized measures (Stanford Diagnostic Reading Test, Woodcock Reading Mastery Tests). In the second study, 27 regular students and 18 LD program students in grades 1-6 from two urban public schools

were tested on the same five direct measures as used in Study I, but with some minor modifications made in them. No standardized tests were used in Study II. In the third study, 43 regular students and 23 LD program students in grades 1-6 from three urban schools were tested on four direct measures of reading (third-grade word list, sixth-grade word list, third-grade oral reading passage, sixth-grade cloze passage) and three standardized measures (Phonetic Analysis and Reading Comprehension subtests of Stanford Achievement Test and Reading Comprehension subtest of Peabody Individual Achievement Test).

Technical Characteristics of Direct Spelling Measures (RR 21)

Three concurrent validity studies of direct measures of spelling were conducted during 1978-79 in order to examine (a) relationships between the direct measures and standardized achievement measures, (b) resource vs regular program differences in student performance, (c) grade level differences in student performance, and (d) various scoring procedures, time limits, and word lists.

In the first study, 27 regular class students and 15 LD program students in grades 2-6 from two urban public schools were tested on two direct spelling measures (3 dictated word lists and a picture stimulus written sample) and one standardized measure (Test of Written Spelling). In the second study, 35 regular students and 10 LD program students in grades 2-6 from two different urban public schools were tested on four word lists (selected from various grade levels) and the spelling section of the Peabody Individual Achievement Test. In the third study, 32 regular students and 29 LD program students in grades 2-6 from two urban public schools and four urban parochial schools

were tested on four word lists (3 of which had been used in Study II, plus one developed by selecting randomly from a basal reading series) and the spelling section of the Stanford Achievement Test.

Technical Characteristics of Direct Written Expression Measures (RR 22)

Three concurrent validity studies of direct measures of written expression were conducted during 1978-79 in order to examine (a) relationships between the direct measures and standardized achievement measures, (b) resource vs regular program differences in student performance, (c) grade level differences in student performance, and (d) various scoring procedures.

In the first study, 16 regular class students and 12 LD program students in grades 3-6 from two urban schools were given two direct measures of written expression (story starter and picture stimulus) and one standardized measure (Test of Written Language). Six scoring procedures were applied to the written samples (T-unit length, mature words, large words, words spelled correctly, total words written, and rates of words written). In the second study, 24 regular class students and 28 LD program students in grades 3-6 in one urban public school were tested on three direct measures (story starter, picture stimulus, and topic sentence) and two standardized measures (Test of Written Language, and Language section of Stanford Achievement Test). Scoring procedures used were identical to those of Study I. In the third study, 51 regular class students and 31 LD program students in grades 3-6 from five urban elementary schools were tested with the same direct measures and standardized measures as in Study II. In

addition, the Developmental Sentence Scoring System was employed to provide an additional validation measure.

Direct Measure Assessment of Low Achievers (RR 71)

During 1980-81, a subtest of the students who participated in the psychometric assessment of low achievers study were included in this study, in which the students' performances on direct measures of reading, spelling, and writing were monitored over a five-week period. Students tested were 34 school-identified LD students and 37 low achievers, all of whom were in the fifth grade at the time the direct measures were administered to them.

Special education resource teachers in the students' schools served as testers. These individuals were trained in the administration of the academic measures and given materials for each content area. Four alternate forms were developed for each area, with the same materials used in week 1 and week 5. Examiners assessed each student individually, on a weekly basis, for five weeks.

Comparison of Direct Measure Eligibility Criteria (RR 89)

During 1982, performance data on direct measures of reading, spelling, and written expression were analyzed to determine the percentages of students who would be eligible for special education services by each of four discrepancy criteria. The data were obtained during 1979-80 from 566 students enrolled in grades 1-6 in Minnesota, Pennsylvania, and Washington. Data were entered into four peer discrepancy criteria (1.5, 2.0, 2.5, and 3.0 times discrepant from peers) and the percentage of students classified according to each criterion was calculated.

Analysis of Predictive Efficiency of Direct Measures (RR 104)

During 1981-82, two studies were conducted to examine the efficacy of direct measurement, standardized achievement tests, and aptitude-achievement discrepancy scores in distinguishing LD and non-LD students. Two samples of students participated in Study I (reading). The first sample included 43 regular class and 23 LD program students in grades 1-6 in three urban schools. The second sample, used to calculate aptitude-achievement difference scores, included 40 students who had been declared ineligible for special edurural schools. These students were tested on two direct measures of reading (words in isolation and oral reading) and two standardized tests (Stanford Diagnostic Reading Test - Phonetic Analysis and Reading Comprehension, and Peabody Individual Achievement Test Reading Comprehension). Two samples of students participated in Study II (written expression). The first sample included 51 regular class and 31 LD program students in grades 3-6 in five urban schools. The second sample included the same 65 students who participated in Study I. Study II students were tested on one story starter (scored in terms of total words written, words spelled correctly, and correct letter sequences) and the Test of Written Language. In both studies, the discrepancy score was measured by the Woodcock-Johnson Aptitude-Achievement Discrepancy score. The extent to which classification as LD or non-LD was predicted by students' scores on direct measures, standardized measures, and aptitude-achievement discrepancy was examined.

Longitudinal Study of Direct Measures (RR 49)

During 1979-80, 58 children randomly selected from the elementary schools of a small midwestern city were tested on direct measures of reading, spelling, and written expression. The grade 1-6 students ranged in age from 6.3 years to 12.2 years. None of the students was receiving special education services. The direct measures used were those described in RR 20, 21, and 22. All measures were administered in the fall, winter, and spring of the school year by researchers.

Developmental Study of Direct Measures (RR 87)

During 1979-80, 566 students enrolled in grades 1-6 in Minnesota, Pennsylvania, and Washington were administered the direct measures described in RR 20, 21, and 22. Students were selected randomly from school districts that volunteered to participate in the study. There were 275 males and 291 females in the total sample.

The Minnesota sample consisted of 134 of the 566 students, 63 boys and 71 girls. Most of these subjects (73%) were selected from two urban areas with populations of 50,000 and 100,000 people. These elementary students were approximately equally distributed among grades 1 to 6. The Pennsylvania sample of students included 157 boys and 169 girls, equally distributed across the six grade levels. These elementary students were randomly selected from two areas (rural and urban) in Central Pennsylvania. The remaining 106 elementary students tested were from the Seattle, Washington area; 55 were male and 51 were female.

Each child was administered direct measures of reading, spelling, and written expression during the fall and the spring on an individual

basis by an examiner trained in the administration of the measures. Data were examined in terms of grade level differences, annual growth, stability over time, and state, demographic, and sex differences.

Survey of Educational Personnel on Factors Influencing Decisions (RR 25)

During 1978-80, four groups of educational decision makers rated the influence of nine pieces of information on the decisions they made about the educational placement of a child. A total of 536 individuals were included; all previously had been participants in team decision-making meetings. One group included the 224 professionals who participated in the decision-making simulation study (see p. 4). Another group included 89 of the directors of special education who responded to the survey on assessment and decision-making practices (see p. 3). A third group was made up of 159 members of observed placement teams (see p. 1). The final group included 64 decision makers from Virginia (school psychologists, regular education teachers, special education teachers, and support personnel).

All groups were asked to rate, on a scale from 1 (no effect) to 5 (very significant effect), the extent to which nine factors affected their decisions. The nine factors included both child characteristics (SES, sex, attractiveness) and academic scores (IQ, achievement, language, perceptual motor, adaptive behavior, behavioral recordings).

Survey of Special Education Directors on Referral-to-Placement Probabilities (RR 60)

During 1981, 94 special education directors from 37 states responded to a postcard survey. The directors were distributed fairly

evenly across the four regions of the United States, and were located in rural, urban, and suburban areas. A letter explaining the purpose of the study and a postcard were mailed to over 700 directors. Although 164 postcards were returned, many directors indicated they did not have access to the requested data; others completed the postcards inaccurately.

For each of three academic years (1977-78, 1978-79, 1979-80), the postcard survey requested information on (a) the numbers of students referred for psychoeducational evaluation, (b) the numbers of referred students who were evaluated, and (c) the numbers of evaluated students who received special education services.

Survey of Regular Education Teachers and Trainees on their Evaluations of Case Study Student (RR 3)

During 1978, experienced classroom teachers and teachers in training rated a hypothetical child, then viewed a videotape of a fourth grade boy and rated that child. The regular education teacher sample included 36 elementary teachers employed in an urban central Pennsylvania school district. The average age of the 9 males and 27 females was 32.5; average years of teaching experience was 9.6. The trainee sample included 36 students majoring in a teacher preparation program in special education. The average age of the 6 males and 30 females was 25.9.

The teachers and trainees first were asked to rate a hypothetical child who was described as either normal or emotionally disturbed. Then, they viewed a 12-minute videotape that showed a child taking two achievement subtests, working on various perceptual-motor tasks, and

engaging in a brief free play period. All depicted performance was at grade level. The teachers and trainers then rated the videotaped child. Both ratings were made on a 23-item checklist that included four areas: academic skills, developmental level, activity level, and personal/social adjustment. Ratings were made on a scale ranging from "superior" to "far below average."

Survey of Undergraduate Students on their Evaluations of a Case Study Student (RR 4)

During 1978, 128 undergraduate students participated in a study to examine the relationship between diagnostic label assigned to a child and the type of behavior exhibited by the child. The undergraduate students were enrolled in two special education courses; all had taken introductory courses in special education and were familiar with accepted characteristics of exceptional children.

Each undergraduate student reviewed one of four case studies; two labels (LD, ED) and two characteristic behavior samples (LD, ED) formed the four cases. Characteristics (destructiveness, fighting, negativism, or distractibility, impulsivity, short attention span) were presented in a "Behavior Rating Scale" section of the case study. The undergraduate students then rated the relative "disturbingness" and "acceptability" of behaviors exhibited by the child in the case study.

Validation Study of Disturbing Behavior Checklist (RR 8)

The Disturbing Behavior Checklist II (DBC II) was developed to be an indicator of the relative disturbingness of certain behaviors characteristic of learning disabilities. A normative study then was

conducted during 1977 to obtain information on the "disturbingness" of each item, as well as data from which to derive dimensions of disturbing behaviors.

Approximately 150 advanced undergraduate students were asked to complete the DBC II. Each had taken courses in special education, none had student taught, and most were female (90%). Respondents were asked to indicate, on a scale from 1 (not very disturbing) to 5 (very disturbing), "how disturbing" each item was "in working with children." Obtained data were subjected to a principal components factor analysis.

Survey of Fourth-Grade Students' Ratings of a Peer (RR 16)

During 1979, 40 fourth-grade students participated in a study to ascertain the extent to which their ratings of a peer would be affected by categorical labels and assigned attributes. The student sample was drawn from a suburban school and was made up of 70% whites and 53% girls. Each student viewed a videotape of a boy participating in several brief assessment segments and then engaging in free-play activities. All performance depicted on the videotape was normal. Half of the students were told the boy was LD while the other half were told he was normal. Within each label condition, half of the students received suggestions that the child had special abilities in addition to the characteristics observed. The other half received neutral suggestions indicating that the boy was similar to other children in his class.

Students' opinions about the boy were obtained through a 13-item scale containing peer acceptance questions such as how well liked the

boy might be. Responses were made on a scale showing five facial diagrams reflective of positive (smiling) or negative (frowning) feelings.

Survey of Special Education Teachers on Placement Decisions and Predicted Performance for a Case Study Child (RR 31)

Special education teachers were asked to make decisions about a fourth-grade boy portrayed as LD or EH (emotionally handicapped) and who exhibited either high or low competence. The 40 teachers participated in the study during 1980. All teachers were attending an inservice workshop; their average age was 30 and their average number of years of teaching experience was 6. All teachers watched a 12-minute videotape of a fourth-grade boy performing on some achievement test items, perceptual-motor tasks, and "free-plays" for a short period of time. All performances were at grade level. The teachers also read a one-page case report summary that provided additional information indicative of a normal child. For half of the teachers, the case study noted an LD placement for the child; EH placement was indicated for the others. Spelling and math work samples also were included to depict the competence of the child; half portrayed high competence and half portrayed low competence.

After viewing the videotape and reviewing the case study, the teachers indicated the appropriateness of several classroom placement alternatives (LD resource room, EH resource room, regular classroom) on a scale from 1 (not very appropriate) to 5 (very appropriate). In addition, the teachers indicated the score they thought the child would receive if given similar math or spelling work in the future.

Survey of Special Education Teachers on Their Attributions for Observed Student Performance (RR 43)

During 1980, a study was conducted to evaluate the extent to which special education teachers judged the mathematics performance of a fourth grade boy to be a function of his handicapping condition and/or his competence. The subjects were 46 special education teachers who were enrolled in a week-long inservice workshop on programming for emotionally handicapped youngsters. Approximately 80% of the group was female; the average age of the participants was 30 years and average number of years of teaching experience was 6. Most (54%) of the participants were currently teaching emotionally handicapped youngsters; approximately 20% were teachers in learning disabilities or mental retardation special classes. About half of the teachers were certified in the area in which they were currently teaching and all of the others were in the process of becoming certified in their current teaching area. All of the teachers were certified in at least one area of special education.

Each teacher observed a videotape presentation of a student working on some achievement test items and some perceptual-motor tasks, and engaging in a brief free-play period. All student behavior on the tape was average. The teacher then reviewed a brief case summary that provided information suggesting average intellectual ability and some minor behavior problems. Half of the summaries contained information from an LD teacher and half contained information from an ED teacher. Also, student work samples were included; half of the teachers saw samples indicating relatively high

student competence, and half saw samples indicating relatively low competence.

The extent to which the performance of the child was thought to be due to various attributes was evaluated by a short questionnaire. Teachers were asked to rate the "extent to which" math "performance was due to" ability, level of task difficulty, chance or luck, or the student's efforts. A rating scale, in which 1 = not to a great extent and 5 = to a great extent, was used to record the teachers' responses. Additionally, the participants were asked to indicate what scores (i.e., 0-20%, 21-40%, 41-60%, 61-80%, 81-100%) they thought the child would receive if given a similar math test in the future.

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